

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
18 October 2001 (18.10.2001)

PCT

(10) International Publication Number
WO 01/78382 A2

(51) International Patent Classification⁷: H04N 5/445

(21) International Application Number: PCT/US01/11534

(22) International Filing Date: 10 April 2001 (10.04.2001)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/195,946 10 April 2000 (10.04.2000) US
60/202,306 5 May 2000 (05.05.2000) US

(71) Applicant: UNITED VIDEO PROPERTIES, INC.
[US/US]; 7140 South Lewis Avenue, Tulsa, OK 74136
(US).

(72) Inventors: WALKER, Todd, A.; 11126 South 70th East
Avenue, Bixby, OK 74008 (US). ELLIS, Michael, D.

1300 Kingwood Place, Boulder, CO 80304 (US). GAY-DOU, Danny, R.; 9731 S. Evanston Avenue E. #3008, Tulsa, OK 74137 (US). REICHARDT, M., Scott; 7735 S. Memorial Drive #3303, Tulsa, OK 74133 (US).

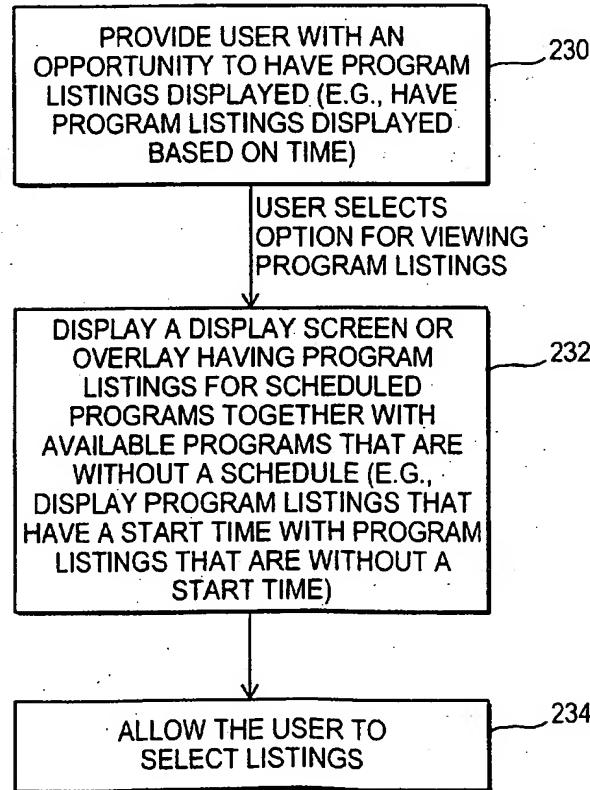
(74) Agents: PIERRI, Margaret, A. et al.; c/o Fish & Neave, 1251 Avenue of the Americas, New York, NY 10020 (US).

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW.

(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE,

[Continued on next page]

(54) Title: INTERACTIVE TELEVISION PROGRAM GUIDE SYSTEMS WITH INTEGRATED PROGRAM LISTINGS



(57) Abstract: An interactive television system is provided. An interactive television application such as an interactive television program guide may display screens of program listings for a user. Such program guide screens may include listings for both scheduled program and for programs that are without a scheduled start time. Program listings may be displayed based on time, genre, theme, etc. Menu options may be provided that allow the user to search for video-on-demand programs by title, actor, keyword, genre, etc.

WO 01/78382 A2



IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

Published:

- *without international search report and to be republished upon receipt of that report*

INTERACTIVE TELEVISION PROGRAM GUIDE SYSTEMS
WITH INTEGRATED PROGRAM LISTINGS

Cross Reference to Related Application

This application claims the benefit of United States Provisional Patent Application No. 60/202,306, filed May 5, 2000, and United States Provisional Patent Application No. 60/195,946, filed April 10, 2000, which are hereby incorporated herein in their entirety. This application is related to copending patent application 10 entitled Interactive Media Guide with Media Guidance Interface, by William L. Thomas et al., U.S. application No. _____, Docket No. UV-196, filed on April 10, 2001 on the same date as this application which is hereby incorporated by reference herein in its 15 entirety.

Background of the Invention

This invention relates to television systems, and more particularly, to interactive television systems such as interactive television program guide systems that provide users with access to video-on-demand offerings.

Interactive television program guides are typically implemented on set-top boxes connected to televisions. Such program guides may be used to

- 2 -

present screens of interactive television program listings to users.

Video-on-demand systems and personal video recorders allow users to have video programming immediately delivered to the user for viewing over a suitable path. Video-on-demands systems and personal video recorder present programs that are without any particular scheduled airing time. Conventional television systems present listings based on time to allow a user to make a current decision about programming. Such conventional systems however, are deficient because users are not provided with the full range programming that is available.

Summary of the Invention

In accordance with the principles of the present invention, a system is provided in which an interactive television application such as an interactive television program guide is implemented using user equipment. The user equipment may be based on a set-top box, personal computer, personal computer television (PC/TV), satellite receiver, or other suitable user device. The user equipment may have a display such as a television, computer monitor, or the like on which videos and information provided by the interactive television program guide may be presented.

The interactive television program guide may be used to access information such as published schedules for television programs that are scheduled to air, information on available programs that are without an airing schedule, information on programming that is available on demand, etc. Listings for television

- 3 -

programs (e.g., scheduled programs, programs without an airing schedule, etc.) may be displayed on the display of the user equipment. Program listings may be organized by genre (e.g., comedy, sports, movies, news, 5 etc.) or may be organized by time, or by channel, etc. Screens of program listings information may be accessed from a main menu or other suitable interface.

The interactive television program guide may also be used to access information and access programs 10 that are available on demand (e.g., video-on-demand, personal video recorders, etc.). Programs that are available on demand may be programs such as programs that do not have a specified start time (or end time). Such programs may have a price associated with viewing 15 the program or may be without an associated price for viewing the program. Listings for programs that are available on demand and scheduled programs may be presented on the same program listings screens that are used to display television program listings. For example, video-on-demand program listings may be 20 incorporated into a list of sports programs or a list of programs organized by time. The program guide may allow users to search for programs by actor, by keyword, by genre, etc. If desired, the program guide 25 may search for programs in listings of scheduled programs and any other listings that are available through the guide.

For programs that are video-on-demand programs, when a user identifies a video-on-demand 30 program listing of interest, the user may select that listing using a remote control or other suitable user interface. The program guide may provide the user with

- 4 -

interactive ordering screens that allow the user to purchase the desired video-on-demand program. The purchased video-on-demand program may be provided to the user in real time.

5 A program listings display screen that is displayed may include a single list to consolidate programming for programs that have schedules and for programs that are without schedules. The displayed list be a continuous uninterrupted list (e.g., the list
10 is displayed without interruptions between listings in the list). In the display uninterrupted list, all program listings are treated for display in the same way. An indication may be provided (e.g., a different colors for listings) to distinguish whether a program
15 is a scheduled program or whether the program is one that is without a schedule. This single consolidated list gathers together all relevant listings in a single contiguously displayed list. Examples of such lists are provided and described in connection with FIGS. 12-
20 19.

Further features of the invention, its nature and various advantages will be more apparent from the accompanying drawings and the following detailed description of the preferred embodiments.

25 Brief Description of the Drawings

FIG. 1 is a diagram of an illustrative interactive television system in accordance with the present invention.

30 FIG. 2 is a diagram of illustrative user television equipment in accordance with the present invention.

- 5 -

FIG. 3 is a diagram of additional illustrative user television equipment in accordance with the present invention.

5 FIG. 4 is a diagram of an illustrative remote control in accordance with the present invention.

FIG. 5 is a diagram of illustrative user computer equipment in accordance with the present invention.

10 FIG. 6 is a generalized diagram of illustrative user equipment in accordance with the present invention.

FIG. 7 shows an illustrative menu screen in accordance with the present invention.

15 FIG. 8 shows an illustrative video-on-demand program guide screen in accordance with the present invention.

FIG. 9 shows an illustrative program guide screen containing video-on-demand movie listings in accordance with the present invention.

20 FIG. 10 shows an illustrative video-on-demand ordering screen that may be provided in accordance with the present invention.

25 FIG. 11 shows how an information region with playback controls may be provided by the program guide when a video-on-demand program is being played for the user in accordance with the present invention.

30 FIG. 12 shows an illustrative program guide screen in which video-on-demand programs and television programs are organized by time in accordance with the present invention.

FIG. 13 shows an illustrative program guide screen in which video-on-demand programs and television

- 6 -

programs are organized by the sports genre in accordance with the present invention.

FIG. 14 shows an illustrative program guide screen in which video-on-demand programs and television programs are organized by the movies genre in accordance with the present invention.

FIG. 15 shows an illustrative program guide screen in which video-on-demand programs and television programs are organized by the children's genre in accordance with the present invention.

FIG. 16 shows an illustrative search by title screen that may be provided by the program guide to allow users to search for television programs and video-on-demand programming by title in accordance with the present invention.

FIG. 17. shows an illustrative search by actor screen that may be provided by the program guide to allow users to search for television programs and video-on-demand programming by actor in accordance with the present invention.

FIG. 18 shows an illustrative search by keyword screen that may be provided by the program guide to allow users to search for television programs and video-on-demand programming by keyword in accordance with the present invention.

FIG. 19 shows an illustrative recommended viewing screen that may be provided by the program guide to promote video-on-demand programs and television programs in accordance with the present invention.

FIG. 20 is a flow chart of illustrative steps involved in providing a display screen having scheduled

- 7 -

programs and programs without a schedule in accordance with the present invention.

FIG. 21 is a flow chart of illustrative steps involved in presenting listings based on a criteria in accordance with the present invention.

FIG. 22 is a flow chart of illustrative steps involved in searching for programs in accordance with the present invention.

FIG. 23 is a flow chart of illustrative steps involved in providing display screens having integrated program listings in accordance with the present invention.

FIG. 24 is a diagram of a functional block diagram for presenting listings when there are multiple television sources in accordance with the present invention.

FIG. 25 is a flow chart of illustrative steps involved in using the program guide to provide the user with access to television programming and program listings and video-on-demand programming and program listings in accordance with the present invention.

FIG. 26 is a flow chart of illustrative steps involved in configuring program listings for display in accordance with the present invention.

25 Detailed Description of the Preferred Embodiments

Programs listings for programming from a plurality of different sources including programs that are without a scheduled airing time and programs that have scheduled airing times may be presented to users together on the same display screen. This will allow a user to make a decision about programming based on a

- 8 -

robust grouping of information. For clarity and brevity such systems and methods are primarily described in the context of program guide systems that have video-on-demand programming. Other configurations 5 may also include program listings that are without schedules (e.g., PVR programming).

An illustrative interactive television system 10 in accordance with the present invention is shown in FIG. 1. Television programming and digital music may 10 be provided from programming sources 12 to television distribution facilities such as television distribution facility 14 using communications path 16. Programming sources 12 may be any suitable sources of television and music programming, such as television and music 15 production studios, etc. Programming sources 12 may provide programming that is to be broadcast according to a schedule (e.g., a schedule that is published in advance).

Video-on-demand programming may be provided 20 using remote servers such as server 56 or other suitable video-on-demand equipment. If desired, servers such as server 56 or other video-on-demand equipment may be located at network nodes associated with television distribution facility 14 or other 25 suitable locations.

Examples of client-server program guides are shown in Ellis et al. U.S. application No. 09/332,244 which is hereby incorporated herein in its entirety. Remote servers may be used to record programming for 30 selective presentation to users.

Television distribution facility 14 may be a cable system headend, a satellite television

- 9 -

distribution facility, a television broadcast facility, or any other suitable facility for distributing video-on-demand content, television, and music programming to users. There are typically numerous television

5 distribution facilities 14 in system 10, but only one is shown in FIG. 1 to avoid over complicating the drawings.

10 Communications path 16 may be a satellite path, a fiber-optic path, a cable path, or any other suitable wired or wireless communications paths or combinations of such paths.

15 Television distribution facility 14 may be connected to various user equipment devices 18. Such user equipment 18 may, for example, be located in the homes of users. User equipment 18 may include user television equipment 20 or user computer equipment 22.

The user equipment may receive television and music programming, video-on-demand programs, and other information from television distribution facility 14 over communications paths such as communications paths 26, 27, and 28. The user equipment may also transmit signals to television distribution facility 14 over paths 26, 27, and 28. Paths 26, 27, and 28 may be cables or other wired connections, free-space connections (e.g., for broadcast or other wireless signals), satellite links, etc.

30 Program listings source 30 may be used to provide the user with television program listings information such as scheduled broadcast times, titles, channels, ratings information (e.g., parental ratings and critic's ratings), detailed title descriptions, genre or category information (e.g., sports, news,

- 10 -

movies, etc.), information on actors and actresses, running times, available video-on-demand programming, etc.

Program listings source 30 may provide 5 program listings information to television distribution facility 14 over communications path 32 for distribution to the associated user equipment over paths 26, 27, and 28. Communications path 32 may be any suitable communications path such as a satellite 10 communications path or other wireless path, a fiber-optic or other wired communications path, a combination of such paths, etc.

User equipment devices such as user 15 television equipment and personal computers may use the program listings information to display program listings and information for television, video-on-demand programming, and PVR programming for the user. An interactive television program guide application or other suitable application may be used to display such 20 information on the user's display.

An on-line program guide may be provided by a server connected to communications network 34 such as server 36. Server 36 may receive program listings information from program listings source 30 via 25 communications path 38, communications network 34, and communications path 40. Paths 38 and 40 may be satellite paths, fiber-optic paths, wired paths, etc. Communications network 34 may be any suitable communications network, such as the Internet, the 30 public switched telephone network, a packet-based network, etc.

- 11 -

User equipment 18 may access the on-line program guide via communications path 42, which may be any suitable communications path such as a wired path, a cable path, fiber-optic path, satellite path, a combination of such paths, or any other suitable path.

5 User equipment 18 may also access the on-line program guide via communications path 26, television distribution facility 14, and communications path 44. For example, a cable modem or the like may be used by

10 user equipment 18 to communicate with television distribution facility 14. Television distribution facility 14 may communicate with communications network 34 over any suitable path 44, such as a wired path, a cable path, fiber-optic path, satellite path, a combination of such paths, etc.

15

User equipment such as user television equipment 20 and user computer equipment 22 may access the on-line program guide using similar arrangements. User television equipment 20 may access the on-line program guide using communications path 46 or using path 27, television distribution facility 14, and path 44. User computer equipment 22 may access the on-line program guide using communications path 48 or using path 28, television distribution facility 14, and path 44. Paths 46 and 48 may be any suitable paths, such as wired paths, cable paths, fiber-optic paths, satellite paths, a combination of such paths, etc.

Interactive television applications other than program guide applications may use service providers such as service provider 50. For example, a home shopping service may be supported by a service provider such as service provider 50 that has sales

- 12 -

representatives, order fulfillment facilities, account maintenance facilities, and other equipment for supporting interactive home shopping features. A home shopping application that is implemented using the user equipment 5 may be used to access the service provider to provide these features to the user. The user equipment may access service provider 50 via television distribution facility 14 and communications path 52 or via communications network 34 and communications path 10 54. Communications paths such as paths 52 and 54 may be any suitable paths, such as wired paths, cable paths, fiber-optic paths, satellite paths, a combination of such paths, etc.

Another example of an interactive television application is a home banking application. A home banking service may be supported using personnel at facilities such as service provider 50. An interactive home banking application that is implemented using the user equipment may access the home banking service via television distribution facility 14 and communications path 52 or via communications network 34 and communications path 20 54.

If desired, applications such as the interactive television program guide application, a home shopping application, a home banking application, and other applications (e.g., applications related to e-mail and chat or other communications functions, etc.) may be provided as separate applications that are accessed through a navigation shell application (i.e., 25 30 a menu application with menu options corresponding to the applications). The features of such applications may be combined. For example, video-on-demand, home

- 13 -

shopping, and communications functions may be incorporated into the program guide or other application.

Moreover, home banking, home shopping, video-on-demand, communications, and navigation, are only a few illustrative examples of the types of interactive television application features that may be supported by system 10. Other suitable services that may be supported include, news services, Internet services, interactive wagering services (e.g., for wagering on horse races and the like), etc.

These applications or features may be implemented locally on the user equipment. The applications or features may also be implemented using a client-server architecture in which the user equipment serves as a client processor and a server such as server 56 at television distribution facility 14 or other suitable location acts as a server processor. Other distributed architectures may also be used if desired.

Illustrative user television equipment 20 that is based on a set-top box arrangement is shown in FIG. 2. Input/output 58 may be connected to communications paths such as paths 27 and 46 of FIG. 1. Television programming, video-on-demand programming, and other programming information may be received using input/output 58 of FIG. 2. Commands and requests and other information from the user may also be transmitted over input/output 58.

Set-top box 60 may be any suitable analog or digital set-top box. Set-top box 60 may contain an analog tuner for tuning to a desired analog television

- 14 -

channel. Set-top box 60 may also contain digital decoding circuitry for receiving digital television, video-on-demand programming, and music channels. Both analog and digital channels may be handled together if 5 desired. Video-on-demand programming may be provided using a digital television channel or other suitable communications path.

Set-top box 60 also contains a processor (e.g., a microcontroller or microprocessor or the like) 10 that is used to execute software applications. Set-top box 60 may contain memory such as random-access memory for use when executing applications. Nonvolatile memory may also be used (e.g., to launch a boot-up routine and other instructions). Hard disk storage may 15 be used to back up data and to otherwise support larger databases than may be supported using random-access memory approaches.

Set-top box 60 may have infrared (IR) or other communications circuitry for communicating with a 20 remote control. Set-top box 60 may also have dedicated buttons and a front-panel display. The front-panel display may, for example, be used to display the current channel to which the set-top box is tuned.

Set-top box 60 may also have communications 25 circuitry such as a cable modem, an integrated services digital network (ISDN) modem, a digital subscriber line (DSL) modem, a telephone modem, etc. for communications with other equipment. Such communications may involve the Internet or any other suitable communications 30 networks or paths.

A videocassette recorder 62 or other suitable recording device may be connected to set-top box 60.

- 15 -

This allows videos from set-top box 60 to be recorded. For example, if set-top box 60 is tuned to a given television or video-on-demand channel, the video signal for that channel may be passed to videocassette recorder 62 for recording on a videocassette. If desired, videocassette recorder functions such as start, stop, record, etc. may be controlled by set-top box 60. For example, set-top box 60 may control videocassette recorder 62 using infrared commands directed toward the remote control inputs of videocassette recorder 62.

The output of videocassette recorder 62 may be provided to television 64 for display to the user. If videocassette recorder 62 is not being used, the 15 video signals from set-top box 60 may be provided directly to television 64. If desired, any suitable monitor may be used to display the video.

Another illustrative arrangement for user television equipment 20 is shown in FIG. 3. In the 20 example of FIG. 3, user television equipment 20 includes a digital video recorder 66 (e.g., a personal video recorder (PVR)) and a television 68. Input/output 70 may be connected to communications paths such as paths 27 and 46. Television programming, 25 video-on-demand programming, and other information or programming may be received using input/output 70. Commands and requests and other information from the user may be transmitted over input/output 70.

Digital video recorder 66 may be similar to a 30 standard set-top box, except that a hard disk or other suitable storage medium may be used for video storage.

- 16 -

in lieu of videocassettes. The hard disk may be internal to digital video recorder 66.

Digital video recorder 66 may contain an analog tuner for tuning to a desired analog television channel. Digital video recorder 66 may also contain digital decoding circuitry for receiving digital television, video-on-demand programming, and music channels. If desired, digital video recorder 66 may contain circuitry for handling both analog and digital channels. Digital video recorder 66 also contains a processor (e.g., a microcontroller or microprocessor or the like) that is used to execute software applications. Digital video recorder 66 may contain memory such as random-access memory for use when executing applications. Nonvolatile memory may also be used to store a boot-up routine or other instructions. The hard disk and other storage in digital video recorder 66 may be used to support databases (e.g., program guide databases or interactive television application databases).

Digital video recorder 66 may have IR communications circuitry or other suitable communications circuitry for communicating with a remote control. Digital video recorder 66 may also have dedicated buttons and a front-panel display. The front-panel display may, for example, be used to display the current channel to which the digital video recorder is tuned.

Digital video recorder 66 may also have communications circuitry such as a cable modem, an integrated services digital network (ISDN) modem, a digital subscriber line (DSL) modem, a telephone modem,

- 17 -

etc. for communications with other equipment. Such communications may involve the Internet or any other suitable communications networks or paths.

If desired, digital video recorder 66 of FIG. 3 or set-top box 60 of FIG. 2 may be a satellite receiver or other equipment that has wireless communications circuitry for receiving satellite signals.

Television programming and video-on-demand programs may be recorded on the hard disk of digital video recorder 66. Digital video recorder 66 may record new video while previously recorded video is being played back on television 68. This allows users to press a pause button during normal television viewing. When the pause button is pressed, the current television program is stored on the hard disk of digital video recorder 66. When the user presses play, the recorded video may be played back. This arrangement allows the user to seamlessly pause and resume television viewing.

A personal video recorder may be provided using the hardware and software capabilities of digital video recorder 66. If desired, a personal video recorder may be provided wherein a client-server arrangement between user television equipment and a server such as server 56 of FIG. 1 is used to record programs at the server. Programs recorded at the server may be played back upon user request from user television equipment. Examples of client server arrangements in which programs may be recorded from a user at the server are shown in Ellis et al. U.S. application No. 09/332,299 mentioned above. If

- 18 -

desired, digital video recorder 66 or some other video recorder may be in a client-server arrangement or command-controlled arrangements with user television equipment such as a set-top box at a user's home to 5 provide a personal video recorder. Information for programs may be recorded with the programs. The recorded information may be the source of program listings information for displaying PVR listings.

Examples of personal video recorders and 10 system (e.g., local or remote recorders) are illustratively described in U.S. application No. 09/157,244, filed September 17, 1998 and U.S. application No. 09/332,244, filed June 11, 1999, which are hereby incorporate herein in their entirety.

15 The set-top box arrangement of FIG. 2 and the digital video recorder set-top box arrangement of FIG. 3 are merely illustrative. Other arrangements may be used if desired. For example, user television equipment may be based on a WebTV box, a personal 20 computer television (PC/TV), or any other suitable television equipment arrangement. If desired, the functions of components such as set-top box 60, digital video recorder 66, a WebTV box, or PC/TV or the like may be integrated into a television or personal computer 25 or other suitable device.

An illustrative remote control 72 for operating user television equipment 20 is shown in FIG. 4. Remote control 72 may have keys 74 such as channel up and down keys, a power on/off key, numeric 30 keys, a favorites key (e.g., for setting favorites in a program guide application or other interactive television application), an info key (for requesting

- 19 -

that additional information on a selection be displayed), etc. Arrow keys 76 may be used to position an on-screen cursor or highlight region on options of interest. Highlighted options may be selected using OK key 78. Menu key 80 may be used to direct an interactive television application (e.g., a program guide application, a nav shell application, or any other suitable application) to display a menu of available options.

Help key 82 may be used to invoke help functions such as context-sensitive on-screen help, etc.

Illustrative user computer equipment 22 is shown in FIG. 5. In the arrangement of FIG. 5, personal computer 84 may be controlled by the user using keyboard 86 or other suitable user input device, such as a trackball, mouse, touch pad, touch screen, voice recognition system, etc. Television programming, video-on-demand programming, and interactive television application content may be displayed on monitor 88. Television programming and other information may be received from paths 28 and 48 (FIG. 1) using input/output 90. The user may also send commands and other information to remote services over input/output line 90.

Personal computer unit 84 may contain a television tuner card for decoding analog and digital television channels. The television tuner card may contain an analog tuner for tuning to a given analog channel and digital decoding circuitry for filtering out a desired digital television channel, video-on-

- 20 -

demand channel, or music channel from a packetized digital data stream.

The user computer equipment arrangement of FIG. 5 is merely illustrative. Any suitable computer equipment arrangement may be used if desired.

Moreover, the user television equipment and user computer equipment arrangements described above are merely illustrative. A more generalized embodiment of illustrative user equipment is shown in FIG. 6.

As shown in FIG. 6, control circuitry 92 is connected to input/output 94. Input/output 94 may be connected to communications paths such as paths 26, 27, 28, 42, 46, and 48 of FIG. 1. Television programming, video-on-demand programming, music programming and/or other programming may be received via input/output 94 (e.g., from programming sources 12 and television distribution facility 14). Program schedule information for an interactive television program guide and information on programs may also be received via input/output 94. Input/output 94 may also be used to receive information for other interactive television applications. The user may use control circuitry 92 to send commands, requests, and other suitable information using input/output 94.

Control circuitry 94 may be based on any suitable processor such as a microprocessor, microcontroller, etc. Memory or other suitable storage devices may be provided as part of control circuitry 94. Tuning circuitry such as an analog tuner, an MPEG-2 decoder or other digital tuning circuitry, or any other suitable tuning circuits or combinations of such circuits may also be included as part of circuitry

- 21 -

92. The tuning circuitry may be used to tune the user equipment to a particular channel to receive television programming, video-on-demand programming, or music.

Video programming and on-screen options and information may be displayed on display 100. Display 100 may be a monitor, a television, or any other suitable equipment for displaying visual images. Speakers 102 may be provided as part of a television or may be stand-alone units. Digital music and the audio component of videos displayed on display 100 may be played through speakers 102.

A user may control the control circuitry using user input interface 96. The user input interface may be any suitable user interface, such as a mouse, trackball, keypad, keyboard, touch screen, touch pad, or any other suitable user input interface. A microphone 98 and video camera 104 may be used to supply audio and video information to control circuitry 92.

20 A user of user equipment 18 (e.g., a user of user television equipment, a user of user computer equipment, or a user of any other suitable user equipment device) may invoke an interactive television program guide menu by pressing menu button 80 (FIG. 4) or selecting an appropriate on-screen option from a menu or the like.

An illustrative interactive television program guide menu screen 106 is shown in FIG. 7. Screen 106 may contain selectable advertisements such as advertisements 108 and 110. Screen 106 may also contain viewer services options 112. Suitable viewer services options 112 include an option to access

- 22 -

features and/or information of a personal video recorder, an option to access messages (either e-mail messages or messages provided from television system service provider), an option to adjust parental control settings (e.g., blocked channels or ratings, etc.), an option to set favorites (e.g., favorite channels, etc.), an option to set up the program guide or user equipment, and an option to exit screen 106.

Screen 106 may also contain program listings options 114. Options 114 may include an option to view program listings organized by time, organized by channel, or organized by genre (e.g., sports, children, etc.). Options 114 may also include an option to search for programs of interest (e.g., using keywords, based on a title search, based on an actor search, etc.).

Cable showcase options 116 may be selected to access video-on-demand program listings, pay-per-view program listings, pay-per-view event listings, premium program listings, music program listings, or adult program listings.

Options may be selected using highlight region 118 or other such arrangement. Remote control 72 (FIG. 4) may be used to position highlight region 118 on top of options 112, 114, and 116. The highlighted option may be selected by pressing a select or enter or OK key such as remote control key 78 of FIG. 4.

For brevity and clarity, programming that is available for viewing, but is without a scheduled air time is primarily discussed in the context of video-on-demand programming.

- 23 -

If the user selects the VOD option of FIG. 7, the program guide may present the user with a screen such as screen 119 of FIG. 8. Screen 119 may contain interactive advertisements 120. When the user selects 5 an interactive advertisement from any of the program guide screens, the program guide may provide the user with additional information, with an opportunity to order a program or product, with an opportunity to set a reminder, etc.

10 Screen 119 may also contain various options that allow the user to view video-on-demand program listings organized by different genres (e.g., family, action, drama, comedy, kids, thrillers, classics, etc.). When the user selects one of these options, the 15 program guide may display a screen in which all of the displayed program listings are video-on-demand program listings in the genre associated with the selected option.

20 If the user selects movies A-Z option 124 of screen 119, the program guide may present a screen such as screen 126 of FIG. 9 in which video-on-demand program listings 128 are listed alphabetically.

25 The alphabetical range covered by screen 126 may be shown in region 132. As indicated by arrows 134, the user may use remote control right and left arrow keys or the like to navigate forwards or backwards in the list. The user may select a video-on-demand program listing of interest using highlight region 130.

30 An illustrative video-on-demand ordering screen 136 that may be displayed when the user selects a video-on-demand listing from the list of FIG. 9 or

- 24 -

any other list containing a video-on-demand program listing is shown in FIG. 10. Ordering screen 136 may contain information 138 on the title of the user's selection and the rating for the selection. A detailed

5 information region such as information region 146 may also be provided. Region 146 may include a detailed description of the selection, information on the actors in the movie, the running time, the year of release, etc.

10 If the user selects last option 142, the user may be taken back to screen 126 of FIG. 9. If the user desires to purchase the video-on-demand program, the user may use remote control 72 of FIG. 4 to enter the user's purchase code or personal identification number (PIN) in region 144.

When a valid purchase code or PIN is received by the program guide, the program guide authorizes the distribution of the selected video-on-demand program to the user from server 56 (FIG. 1) or other suitable 20 distribution source. The requested video-on-demand program may be displayed in screen 148 of FIG. 11. A region 150 may be included in screen 148 that contains program title information 152 and time remaining information 154 for the video-on-demand program that is being displayed. Region 150 may also contain a selectable advertisement 156. Region 150 may be provided as an overlay over the video-on-demand program, as an L-shaped frame region surrounding a reduced-size video window, or in any other suitable 25 configuration or layout. Region 150 may be invoked whenever a user presses an appropriate remote control 30

- 25 -

key and may be removed, for example, after a specified period of inactivity.

Region 150 may contain on-screen control options 158. Control options 158 may be selected by the user to stop, pause, play, rewind, record, or fast-forward the video-on-demand program. When the user selects a control command, the program guide may direct server 56 or other suitable equipment to perform the requested function. For example, when the user selects the stop control option 158, the program guide may direct the server 56 to stop transmitting the video-on-demand program to the user equipment. If the user selects rewind option 158, the program guide directs the server 56 to skip to an earlier portion of the video-on-demand program. A real-time rewind process may be used in which the video-on-demand programming is displayed during the rewind operation. Commands for pausing, playing and fast-forwarding may be handled similarly. When the user selects the record command 158, the server may make a copy of the video-on-demand program available to the viewer. For example, a user who "records" the video-on-demand selection may be provided with unlimited viewing opportunities for free. This is merely an illustrative example. Any suitable technique for handling video-on-demand recordings may be used if desired.

Video-on-demand program listings may be displayed on the same program guide program listings screens on which television program listings are displayed. In screen 160 of FIG. 12, program listings 162 are organized by time. Video-on-demand program listings 164 and television program listings 166 for

- 26 -

regular programming may be included in the same list. The regular program listings 166 correspond to programs that are airing at the current time (e.g., 12:30 PM in the example of FIG. 12). The video-on-demand program 5 listings 164 are available at the current time and are being presented on screen 160 as a way to promote these offerings. In some arrangements, more video-on-demand program listings may be available than will fit on a screen such as screen 162. In such arrangements, it 10 may be desirable to only list certain selected video-on-demand programs. The user may use up and down remote control arrow keys or the like to scroll through the list of program listings 162. Programs that are without a broadcast schedule other than video-on-demand 15 programs may be included in program listings 162. Illustrative steps involved in providing display screens for listing programs that are with and without scheduled broadcast times are described below in connection with FIG. 20.

20 As shown in FIG. 13, video-on-demand programs may be included on sports-related program listings screen 168. Television program listings 172 are related to sports. If desired, the video-on-demand listings 170 that are included in screen 168 may also 25 be sports-related. Programs that are without a broadcast schedule other than video-on-demand programs may be included in display screens 168, 176, 184. Illustrative steps involved in providing display screens such as display screens 168, 176 and 184 are 30 described below in connection with FIG. 21.

As shown in FIG. 14, video-on-demand program listings 174 may be included on a movie-related program

- 27 -

listings screen 176 that contains program listings 178 for scheduled television movies (either pay-per-view movies or non-pay-per-view movies).

In screen 176 or other such program guide 5. listings screens, the user may be required to scroll through banner advertisements such as banner advertisement 180 before being presented with additional program listings.

As shown in FIG. 15, video-on-demand program 10 listings 182 may be included in a program listings screen 184 containing television program listings 186 that are directed towards scheduled children's programming. If desired, video-on-demand program 15 listings 182 may be directed toward children's programming.

The program listings in the screens provided by the program guide may be color-coded or otherwise visually distinguished to make it clear what type of programming is being offered. For example, in screen 20 184 of FIG. 15, program listings 182 may be colored in red to indicate they are movies and program listings 186 may be displayed in orange to indicate that they are regular children's television programs.

Programs that are without a schedule other 25 than video-on-demand programs may be included in display screens 168 (FIG. 13), 176 (FIG. 14), and 184 (FIG. 15) with scheduled programming. Illustrative steps involved in providing display screens such as display screens 168 (FIG. 13), 176 (FIG. 14), and 184 30 (FIG. 15) are described below in connection with FIG. 21.

- 28 -

The program guide may allow the user to search for programs. As shown in FIG. 16, the program guide may provide the user with a search screen such as search screen 188. Search screen 188 may contain a 5 search option 190. Search option 190 may allow the user to use remote control 72 (FIG. 4) or other suitable user input interface to select various letters for a title search. The user may scroll through the 10 letters of the alphabet using up and down arrow keys and make a letter selection by using a right arrow key. Mistakes may be corrected by using a left arrow key to return to a previous cell.

The program guide may automatically search for programs such as video-on-demand program listings 15 and scheduled program listings (e.g., television program listings) that match the user's selected title. The search results may be displayed using multiple colors. For example, program listings 192 for movies (video-on-demand movies in the example of FIG. 16) may 20 be displayed in red, whereas program listings 194 for regular television programs may be displayed in blue. Banner advertisements may be displayed using yet another color (e.g., purple).

The program guide may provide users with a 25 search by actor feature. For example, the user may be provided with a search by actor program guide screen such as screen 196 of FIG. 17. The program guide may display program listings 198 that match the user's search criteria as defined using search option 200. 30 The search results may include regular (e.g., non-video-on-demand) television program listings, video-on-

- 29 -

demand program listings, or both regular television program listings and video-on-demand program listings.

FIG. 18 shows how the program guide may provide a screen 202 that allows the user to search for program listings by keyword. The user may enter a desired keyword using option 204. The program guide may search the detailed program descriptions associated with each program to locate matches with the selected keyword. The program guide may display the search results in a list 206. As with the other lists in the program guide screens, the user may select a desired listing using highlight region 208.

Icons may be provided on the listings in any of the listings screens. For example, icons such as icons 210 may be used to provide ratings information. A check icon 212 may be used to indicate that a pay-per-view program has been ordered or that a reminder has been set for a non-pay-per-view program. A lock icon (shown in FIG. 19) may be used to indicate when a program has been blocked using the program guide's parental control functions.

Search options such as the search by program option of FIG. 16, the search by actor option of FIG. 17, and the search by keyword option of FIG. 18, may be accessed from the search option 114 of FIG. 7. An intermediate program guide menu screen may be provided between screen 106 of FIG. 7 and the search options screens of FIGS. 16, 17, and 18 to allow the user to select which type of search is desired.

Illustrative steps involved in searching for programs are described below in connection with FIG. 22.

- 30 -

If the user selects cable picks option 214 of FIG. 8, the program guide may display a screen such as screen 216 of FIG. 19. Screen 216 contains listings for programming that is being promoted by the operator 5 of television distribution facility 14 (FIG. 1) (e.g., a cable system operator) or other suitable entity. The operator may desire to promote popular video-on-demand offerings, programs on premium channels, pay-per-view programming, special events, regular television 10 programs, etc. Illustrative steps involved in providing display screens such as display screen 216 are described below in connection with FIG. 21.

Video-on-demand programs may also be promoted using other arrangements. For example, screens may be 15 provided that highlight video-on-demand new releases, video-on-demand specials, or video-on-demand programs that are coming soon. These screens may be accessed using options such as the video-on-demand options of FIG. 8. Movie saver option 220 of FIG. 8 may be used 20 by the user to save video-on-demand movies and non-video-on-demand movies (e.g., in a personal video archive) for later viewing by the user.

As with the other program listings screens provided by the program guide, the user may select a 25 desired listing using highlight region 218. If the user selects a video-on-demand program, the program guide may request that a server such as server 56 of FIG. 1 provide the program to the user equipment in real time after the user purchases the program. If the 30 user selects a pay-per-view program that has not yet been aired, the user may be provided with an opportunity to order the pay-per-view program and to

- 31 -

set a reminder for the program. If the user selects a non-pay-per-view program, the user may be provided with an opportunity to automatically tune to the selected program (if the program is being aired) or to set a 5 reminder for the program (if the program has not yet started). The user may also use other program guide features with pay-per-view, video-on-demand, and other television programs such as, record, pause, etc. Examples of information display screens for programs 10 and program guide features that are exercisable for programs are illustratively shown in United States Patent application No. 09/356,268, filed July 16, 1999, which is hereby incorporated herein in its entirety.

Illustrative steps involved in providing a 15 program listings display screen for programs that are scheduled to air and for programs that are without a schedule are shown in FIG. 20. At step 230, a user may be provided with an opportunity to have program listings displayed. For example, the user may be 20 presented with an on-screen option or the remote control of a user may have a special key that the user may select when a user desires to see program listings by time. At step 232, a program listings display screen or a program listings overlay may be displayed. 25 For clarity and brevity, program listings are primarily discussed in the context of program listings that are displayed in display screens. Other forms of displays such as overlays may also be used. At step 232, a program listings display screen may be displayed that 30 includes listings for programs that are scheduled to air at particular times (e.g., broadcast television programming) and programs that are currently available

- 32 -

without a scheduled start time. For example, program listings for broadcast television programming and VOD programming may be displayed together in a program listings display screen (e.g., providing program 5 listings by time). The listings for the programs that are scheduled to air at particular times and the listings for programs that are without a scheduled start time may be integrated into a single list in a program listings display screen. The list may be 10 displayed in an uninterrupted form in which the program listings are listed sequentially. The single list may be displayed to consolidate together listings for scheduled programs and for programs that are without scheduled air times. The uninterrupted list allows for 15 each listing to be viewed in the same way except for possibly including some indication of a difference in source. At step 234, a user may be allowed to select any one of the listings that are available in the program listings display screen.

20 Illustrative steps involved in providing an integrated program listings display screen that includes program listings based on a criteria are shown in FIG. 21. At step 236, a user may be provided with an opportunity to select an option to view listings for 25 programs based on a criteria. For example, an on-screen option may be displayed that a user may select when the user desires to view listings based on a particular criteria such as genre, theme, favorites, cable picks, category, etc. If desired, at step 236a, 30 the option for viewing program listings may be displayed in a way that does not inform the user that the listing will include program listings that are

- 33 -

available for viewing and are without schedules. An advantage of this technique is that programs without schedules (e.g., VOD programs) may be promoted to users when the user desires to view listings for programs 5 that have schedules. At step 238, program listings may be displayed in an integrated program listings display screen (e.g., display screens 168 of FIG. 13, 176 of FIG. 14, and 184 of FIG. 15) when a user selects the option to view listings. The program listings that are 10 available from the integrated program listings display screen may be program listings that meet the above-mentioned criteria (e.g., genre, theme, favorites, etc.). The program listings that meet the criteria may include programs that are scheduled to air and programs 15 that are without such a schedule. At step 240, the user may be allowed to select a listing from the program listings display screens to access an information display screen for that program or to access another display screen such as VOD display 20 screen 136 of FIG. 10.

Illustrative steps involved in searching for programs are shown in FIG. 22. At step 242, a database of information on programs that are scheduled to air may be provided. At step 244, a database of 25 information on programs that are available and that are without a schedule for airing may be provided. In FIG. 22, step 242 and 244 are illustrated as two separate steps, but may be provided together in one step. For example, there may be a single database that 30 includes information on scheduled programs and on programs without a schedule. At step 246, a display screen may be displayed to allow a user to select or

- 34 -

enter a parameter for searching to find a program. At 248, in response to a user selecting or entering a parameter, the database of information on programs that are scheduled to air and the database of information on 5 programs that are available and are without a schedule may be searched to identify programs based on the user-selected or user-entered parameter. At step 250, program listings that may include both scheduled programs and programs without a schedule may be 10 displayed.

Illustrative steps involved in providing an integrated program listings display screen for programming from at least two sources are shown in FIG. 23. At step 252, a program guide may be provided 15 (e.g., a program guide that is implemented for use from a user television equipment) that has at least two sources (e.g., VOD, PVR, broadcast television, etc.) for programs for display to a user. At step 254, program listings from the sources may be integrated in 20 a program listings display screen in a single list of programs for presentations to a user. The program listings display screen may present a list in which listings for programs that are available and are without scheduled air times are integrated in the list 25 with listings for programs that have scheduled air times. The integrated list may present programs with schedules and programs without schedules together in the list in essentially the same (e.g., every listing is treated equally). For example, as described above, 30 VOD program listings and broadcast television listings may be integrated in a single list in a program listings display screen (e.g. program listings display

- 35 -

screen 168 of FIG. 13). At step 256, a user may be allowed to select listings from the program listings display screen to access information or program guide features that are related to the program.

5 An illustrative functional block diagram for a system for providing the illustrative steps of FIG. 23 is shown in FIG. 24. System 270 may include first source 258, second source 260, third source 259 and program guide 262. First source 258 may be a first 10 source of television programming for program guide 262. First source 258 may be a source of programs that have scheduled broadcast times such as broadcast television programs (e.g., programming source 12 of FIG. 1). Second source 260 may be a second source of television 15 programming for program guide 262. Second source 260 may be a source of programs that are available but are without scheduled start times such as VOD programs (e.g., server 56 of FIG. 1, digital video recorder 66 of FIG. 3). Third source 259 may be a third source of 20 television programming for program guide 262. Third source 259 may be an addition source of programs that are available but are without scheduled start times such as PVR programs. For example, third source 259 may be a source of VOD programs and second source 260 25 may be a source of PVR listings.

Program guide 262 may be a program guide that is implemented for use from user television equipment such as user television equipment 20 of FIG. 1. Program guide 212, may include first database 264, 30 second database 266, third database 265 and display 268. First database 264 may be a database of information on programs from first source 258 (e.g.,

- 36 -

information on broadcast television programming) and second database 266 may be a database of information on programs from second source 260 (e.g., information on PVR programs). Third database 265 may be a database of 5 information on programs from third source 259. Display 268 may be a display that presents display screens of program listings for use by users.

In operation, program guide 262 may use display 268 to display program listings that are 10 selected for display from first database 264 and second database 266 based on time or some other criteria such as genre, favorites, etc. If desired, a user may be allowed to select from the listings to obtain additional information for the selected listing or to 15 access the program that is associated with the selected listing using signals from an appropriate one of first source 258 or second source 260. Information in first database 264 and second database 266 may have been provided to program guide 262 in any suitable way such 20 as provided with the video for programs, provided separate from programming, provided from one facility for programs from first source 258 and provided from another facility for programs from second source 260, etc. For example, information for PVR programming may 25 be saved when a program is recorded by a PVR. The information may have been stored in a databased in the PVR or stored in the program guide. Some or all of the programming sources may have a database of programming information that is used to send programming 30 information to program guide 262 on the same path as the programming or through another separate path. Program listings information may be provided over paths

- 37 -

separate from a path from a television distribution facility (e.g., path 42, 46, and 48 of FIG. 4.)

Sources of programming information and of television programming are also discussed above in connection with

5 FIG. 1. In one embodiment, the database of program listings information for broadcast television may be provided through paths shown in FIG. 1, the database of programming information for VOD programs may be from a VOD server, and the database of PVR listings may be
10 from a PVR device or from a server (e.g., server 56 of FIG. 1). System 270 may include additional sources of programming and program guide 262 may include additional databases. If desired, program guide 262 may have one database that comprises first database 264
15 second database 266 and third database 265.

Illustrative steps shown in FIGS. 20-23 and illustrative functional blocks shown in FIG. 24 may be implemented using the system, equipment, devices and structures that are described and shown in connection
20 with FIGS. 1-6.

For program guides that primarily use VOD and scheduled programs, illustrative steps involved in accessing television programming and video-on-demand programming are shown in FIG. 25. At step 222, the
25 program guide may provide the user with an opportunity to view video-on-demand listings organized by time, organized by channel, organized by genre, or organized using any suitable program listings feature. For example, the program guide may display on-screen
30 options that allow the user to access lists of program listings containing video-on-demand program listings. The on-screen options may allow the user to display

- 38 -

listings organized by time, organized by channel, or organized by genre. The user may search for listings of interest by title, by actor, by keyword, etc.

5 Listings may also be provided based on a list of popular offerings selected by the television facility operator or a service provider. The user may be provided with on-screen options that allow the user to direct the program guide to display screens containing only video-on-demand program listings, to display

10 screens containing only non-video-on-demand television program listings, or to display screens containing both video-on-demand program listings and non-video-on-demand program listings. These arrangements are merely illustrative examples. Any suitable options may be

15 provided to allow the user to access program listings information including video-on-demand program listings information if desired.

At step 224, after the user has selected a desired option, the program guide may display one or more suitable program guide screens at step 224. For example, the program guide may display a screen or a list on a screen that contains both video-on-demand program listings and television program listings. The user may scroll through the list to view additional program listings. If desired, the video-on-demand program listings may be displayed at the top of a list of program listings on a suitable program guide screen.

At step 226, if the user has selected one of the video-on-demand program listings from the list or screen displayed at step 224, the program guide may provide the user with an opportunity to purchase the selected video-on-demand program at step 226. For

- 39 -

example, one or more ordering screens may be provided that allow the user to view additional information about the selected video-on-demand program, that allow the user to view pricing information for the video-on-demand program, and that allow the user to provide a personal identification number (PIN) or other information that allows the program guide to process the order.

At step 228, after the user has purchased a desired video-on-demand program, the program guide may direct the system to provide the video-on-demand program to the user at step 228. For example, the program guide may direct server 56 (FIG. 1) to provide a digital video stream of the selected program to the user equipment 18.

If desired, the user may use an information key ("info key") on remote control 72 when the user has highlighted a video-on-demand program of interest. Pressing the info key directs the program guide to display an additional information screen for the highlighted listing. The additional information screen may include a detailed description of the video-on-demand program and may include options that allow the user to order the video-on-demand program.

Illustrative steps of FIG. 25 may be implemented using systems, equipment, devices or structures described in connection with FIGS. 1-6.

The system (e.g., system 10) of FIG. 1 may be configured to have integrated program listings displayed. For example, with reference now to FIG. 26, at step 302, the system may be configured to select when and how programs that are available without

- 40 -

schedules are displayed with programs that have airing schedules. The configuration may be selected from television distribution facility 14, from program listings source 30, from server 56 (e.g., VOD server),
5 from another suitable site, or from a combination thereof. Configuration may be selected by sending a command. The configuration may include the screens (e.g., by genre) in which integrated program listings are to be displayed and include the number of titles
10 for programs that are without schedules that are to be displayed in program listing screens. For example, the system may be configured from program listings source 30 to include integrated listings in a genre program listings display screens and to include three VOD
15 listings in the listings display screens. This configuration may be selected with a single command from a suitable site mentioned above. At step 304, programs based on the configuration may be displayed.

The foregoing is merely illustrative of the
20 principles of this invention and various modifications can be made by those skilled in the art without departing from the scope and spirit of the invention.

- 41 -

What is Claimed is:

1. A method comprising:
providing a user with an opportunity to select to have program listings displayed; and displaying a single uninterrupted list in an integrated program listings display screen to consolidate together listings for programs that are scheduled to air and listings for programs that are without scheduled air times including listings for programs that are available from a personal video recorder.
2. The method of claim 1 wherein the listings include listings for broadcast television programs.
3. The method of claim 1 wherein the providing comprises providing the user with an opportunity to select an option to have program listings displayed by time.
4. The method of claim 1 wherein the providing comprises providing the user with an opportunity to select an option to have program listings displayed by genre.
5. The method of claim 1 wherein the providing comprises providing the user with an opportunity to select an option to have program listings displayed based on favorites.

- 42 -

6. The method of claim 1 wherein the providing comprises providing the user with an opportunity to select an option to have program listings displayed based on a criteria.

7. The method of claim 1 wherein the providing comprises providing the opportunity without informing the user that program listings that are without a scheduled air time will be displayed.

8. The method of claim 1 further comprising providing the user with an opportunity to search for programs based on a user-desired parameter.

9. The method of claim 8 further comprises searching information on the programs that are scheduled to air and on the programs that are without scheduled air times to identify matching programs based on the user-desired parameter.

10. The method of claim 9 wherein the displaying comprising displaying listings that are identified based on the search.

11. The method of claim 1 wherein the displaying comprising displaying listings that are recorded at a remote server.

12. The method of claim 1 further comprising allowing configuration of the integrated program listings display screen.

- 43 -

13. The method of claim 1 wherein the listings include listings for video-on-demand programs.

14. The method of claim 13 wherein the listings include listings for broadcast television programs.

15. The method of claim 13 wherein the providing comprises providing the user with an opportunity to select an option to have program listings displayed by time.

16. The method of claim 13 wherein the providing comprises providing the user with an opportunity to select an option to have program listings displayed by genre.

17. The method of claim 13 wherein the providing comprises providing the user with an opportunity to select an option to have program listings displayed based on favorites.

18. The method of claim 13 wherein the providing comprises providing the user with an opportunity to select an option to have program listings displayed based on a criteria.

19. The method of claim 13 wherein the providing comprises providing the opportunity without informing the user that program listings that are without a scheduled air time will be displayed.

- 44 -

20. The method of claim 13 further comprising providing the user with an opportunity to search for programs based on a user-desired parameter.

21. The method of claim 20 further comprises searching information on the programs that are scheduled to air and on the programs that are without scheduled air times to identify matching programs based on the user-desired parameter.

22. The method of claim 21 wherein the displaying comprises displaying listings that are identified based on the search.

23. The method of claim 13 wherein the displaying comprising displaying listings that are recorded at a remote server.

24. The method of claim 13 further comprising allowing configuration of the integrated program listings display screen.

25. A system comprising:
means for providing a user with an opportunity to select to have program listings displayed; and

means for displaying a single uninterrupted list in an integrated program listings display screen that consolidates together listings for programs that are scheduled to air and listings for programs that are without scheduled air times including

- 45 -

listings for programs that are available from a personal video recorder.

26. The system of claim 25 wherein the listings include listings for broadcast television programs.

27. The system of claim 25 wherein the means for providing comprises means for providing the user with an opportunity to select an option to have program listings displayed by time.

28. The system of claim 25 wherein the means for providing comprises means for providing the user with an opportunity to select an option to have program listings displayed by genre.

29. The system of claim 25 wherein the means for providing comprises means for providing the user with an opportunity to select an option to have program listings displayed based on favorites.

30. The system of claim 25 wherein the means for providing comprises means for providing the user with an opportunity to select an option to have program listings displayed based on a criteria.

31. The system of claim 25 wherein the means for providing comprises means for providing the opportunity without informing the user that program listings that are without a scheduled air time will be displayed.

- 46 -

32. The system of claim 25 further comprising means for providing the user with an opportunity to search for programs based on a user-desired parameter.

33. The system of claim 32 further comprises means for searching information on the programs that are scheduled to air and on the programs that are without scheduled air times to identify matching programs based on the user-desired parameter.

34. The system of claim 33 wherein the means for displaying comprises means for displaying listings that are identified based on the search.

35. The system of claim 25 wherein the listings include listings that are for recorded programs that are recorded at a remote server.

36. The system of claim 25 further comprising means for configuring the integrated program listings display screen.

37. The system of claim 25 wherein the listings include listings for video-on-demand programs.

38. The system of claim 37 wherein the listings include listings for broadcast television programs.

39. The system of claim 37 wherein the means for providing comprises means for providing the user

- 47 -

with an opportunity to select an option to have program listings displayed by time.

40. The system of claim 37 wherein the means for providing comprises means for providing the user with an opportunity to select an option to have program listings displayed by genre.

41. The system of claim 37 wherein the means for providing comprises means for providing the user with an opportunity to select an option to have program listings displayed based on favorites.

42. The system of claim 37 wherein the means for providing comprises means for providing the user with an opportunity to select an option to have program listings displayed based on a criteria.

43. The system of claim 37 wherein the means for providing comprises means for providing the opportunity without informing the user that program listings that are without a scheduled air time will be displayed.

44. The system of claim 37 further comprising means for providing the user with an opportunity to search for programs based on a user-desired parameter.

45. The system of claim 44 further comprises means for searching information on the programs that are scheduled to air and on the programs that are

- 48 -

without scheduled air times to identify matching programs based on the user-desired parameter.

46. The system of claim 45 wherein the means for displaying comprises means for displaying listings that are identified based on the search.

47. The system of claim 37 wherein the listings include listings that are for recorded programs that are recorded at a remote server.

48. The system of claim 37 further comprising means for configuring the integrated program listings display screen.

49. A program guide system in which a program guide implemented for use from user television equipment comprising:

user television equipment that is configured to provide a user with an opportunity to select to have program listings displayed, and is configured to display a single uninterrupted list in an integrated program listings display screen to consolidate together listings for programs that are scheduled to air and listings for programs that are without scheduled air times including listings for programs that are available from a personal video recorder.

50. The system of claim 49 wherein the listings include listings for broadcast television programs.

- 49 -

51. The system of claim 49 wherein the user television equipment is configured to provide the user with an opportunity to select an option to have program listings displayed by time.

52. The system of claim 49 wherein the user television equipment is configured to provide the user with an opportunity to select an option to have program listings displayed by genre.

53. The system of claim 49 wherein the user television equipment is configured to provide the user with an opportunity to select an option to have program listings displayed based on favorites.

54. The system of claim 49 wherein the user television equipment is configured to provide the user with an opportunity to select an option to have program listings displayed based on a criteria.

55. The system of claim 49 wherein the user television equipment is configured to provide the opportunity without informing the user that program listings that are without a scheduled air time will be displayed.

56. The system of claim 49 wherein the user television equipment is configured to provide the user with an opportunity to search for programs based on a user-desired parameter.

- 50 -

57. The system of claim 56 wherein the user television equipment is configured to search information on the programs that are scheduled to air and on the programs that are without scheduled air times to identify matching programs based on the user-desired parameter.

58. The system of claim 57 wherein the user television equipment is configured to display listings that are identified based on the search.

59. The system of claim 49 wherein the listings include listings that are for recorded programs that are recorded at a remote server.

60. The system of claim 49 wherein the user television equipment provides the integrated program listings display screen in response to the program listings display screen being configured.

61. The system of claim 49 wherein the listings include listings for video-on-demand programs.

62. The system of claim 61 wherein the listings include listings for broadcast television programs.

63. The system of claim 61 wherein the user television equipment is configured to provide the user with an opportunity to select an option to have program listings displayed by time.

- 51 -

64. The system of claim 61 wherein the user television equipment is configured to provide the user with an opportunity to select an option to have program listings displayed by genre.

65. The system of claim 61 wherein the user television equipment is configured to provide the user with an opportunity to select an option to have program listings displayed based on favorites.

66. The system of claim 61 wherein the user television equipment is configured to provide the user with an opportunity to select an option to have program listings displayed based on a criteria.

67. The system of claim 61 wherein the user television equipment is configured to provide the opportunity without informing the user that program listings that are without a scheduled air time will be displayed.

68. The system of claim 61 wherein the user television equipment is configured to provide the user with an opportunity to search for programs based on a user-desired parameter.

69. The system of claim 68 wherein the user television equipment is configured to search information on the programs that are scheduled to air and on the programs that are without scheduled air times to identify matching programs based on the user-desired parameter.

- 52 -

70. The system of claim 69 wherein the user television equipment is configured to display listings that are identified based on the search.

71. The system of claim 61 wherein the listings include listings that are for recorded programs that are recorded at a remote server.

72. The system of claim 61 wherein the user television equipment provides the integrated program listings display screen in response to the program listings display screen being configured.

1/24

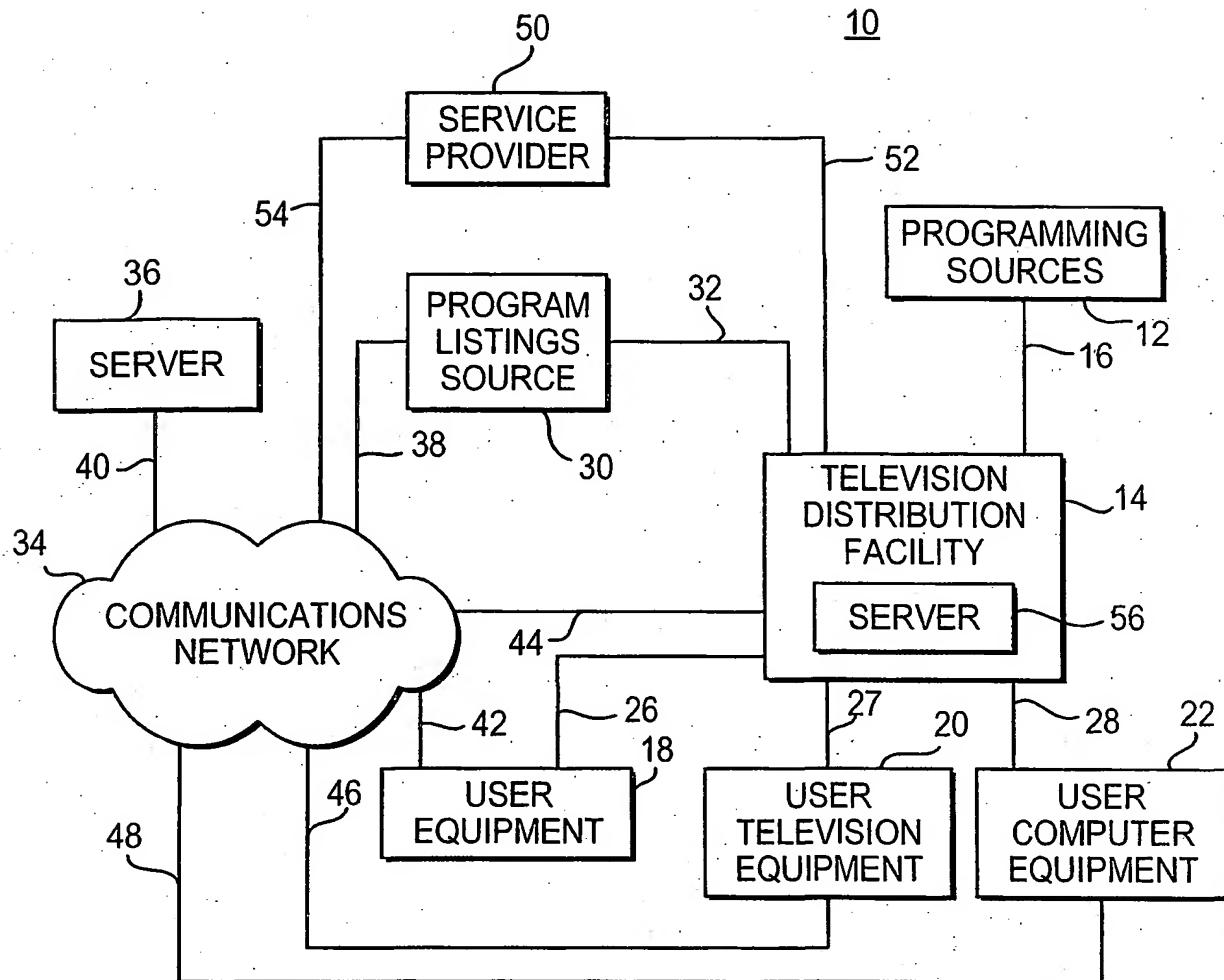


FIG. 1

SUBSTITUTE SHEET (RULE 26)

2/24

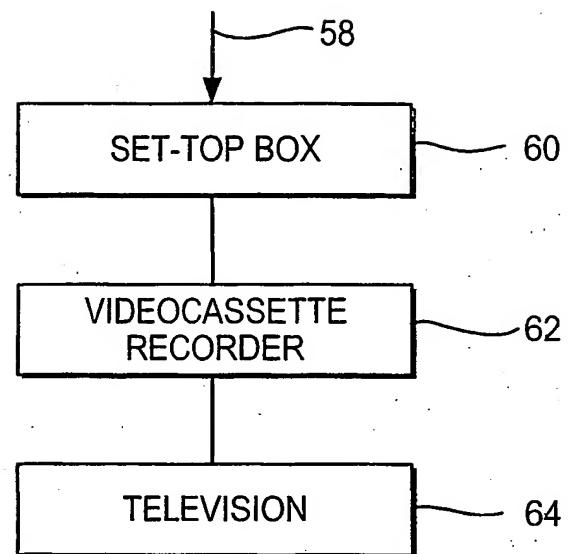
20

FIG. 2

SUBSTITUTE SHEET (RULE 26)

3/24

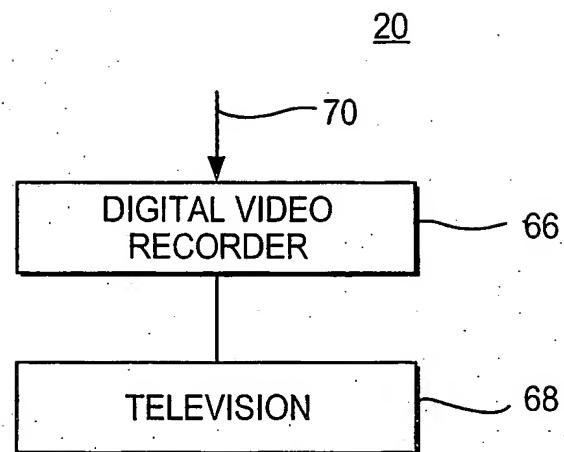


FIG. 3

SUBSTITUTE SHEET (RULE 26)

4/24

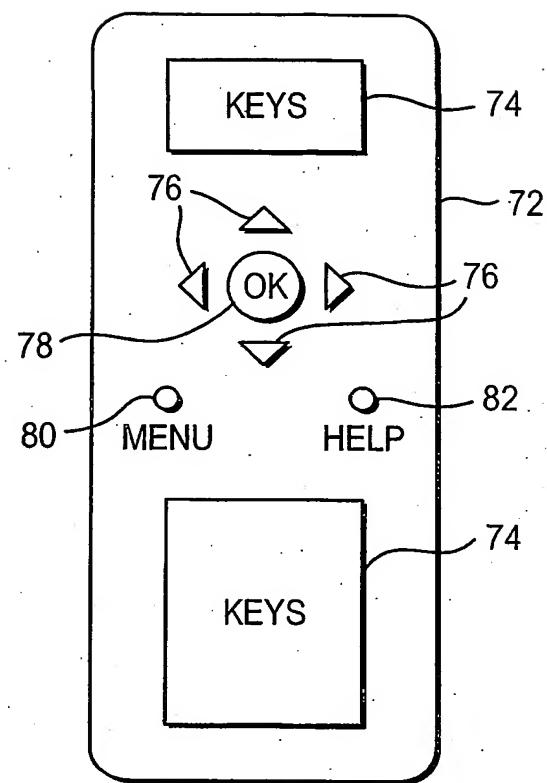


FIG. 4

SUBSTITUTE SHEET (RULE 26)

5/24

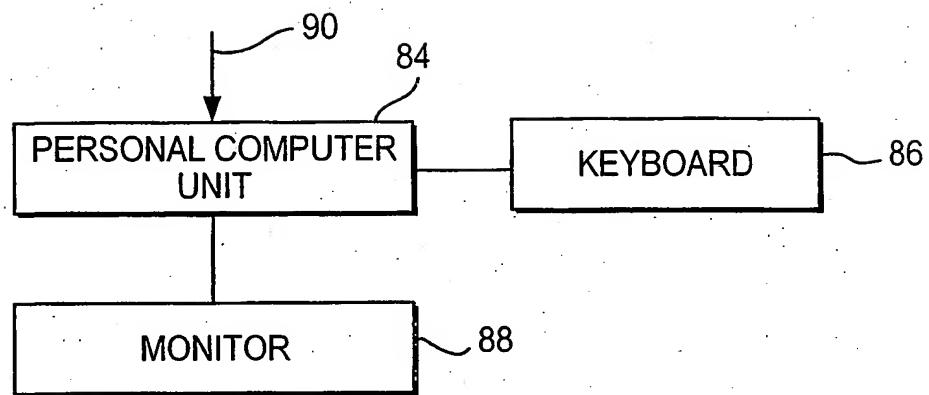
22

FIG. 5

SUBSTITUTE SHEET (RULE 26)

6/24

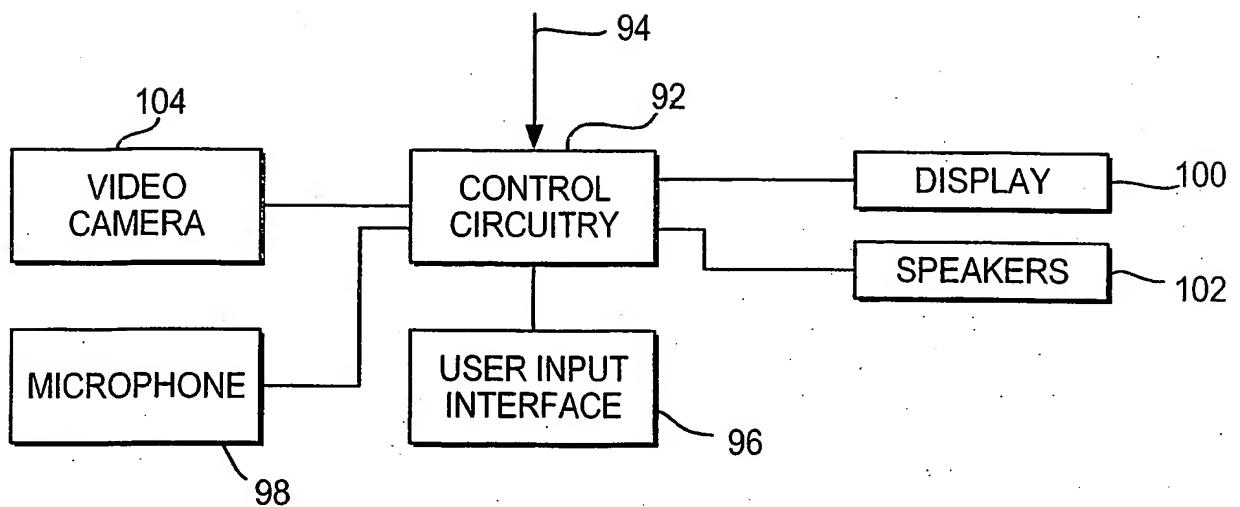


FIG. 6

SUBSTITUTE SHEET (RULE 26)

7/24

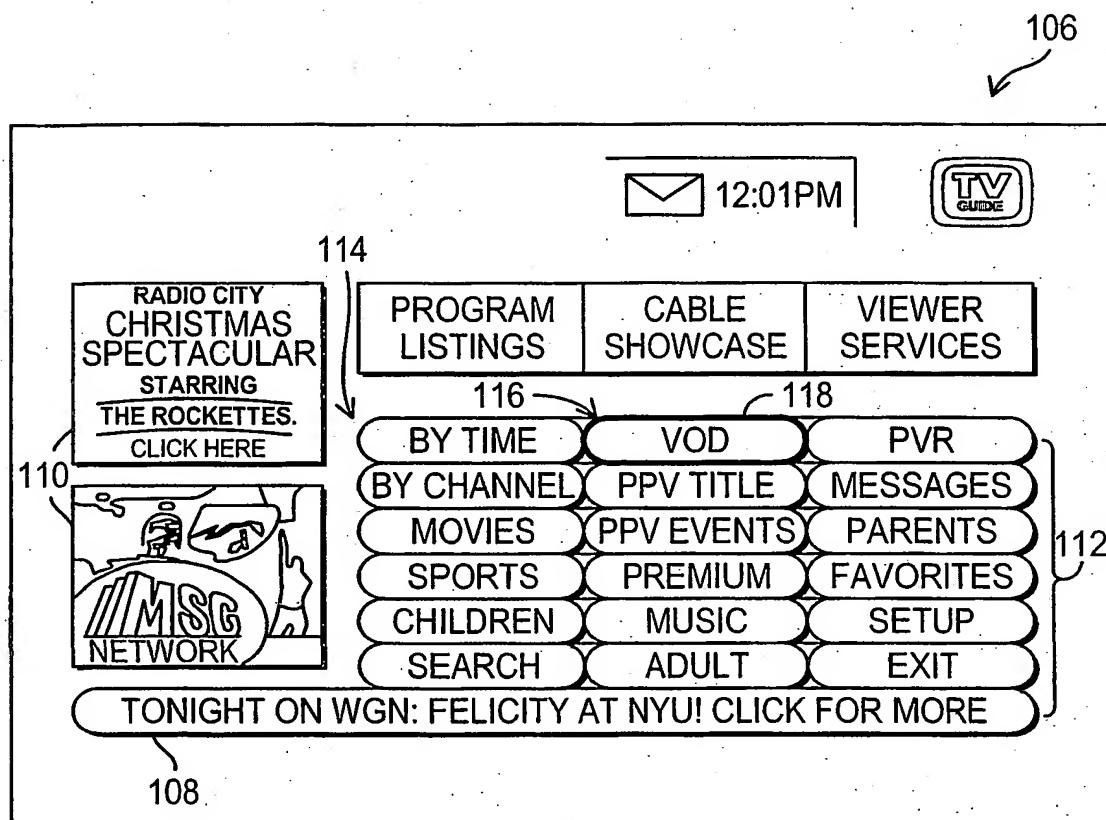


FIG. 7

SUBSTITUTE SHEET (RULE 26)

8/24

119

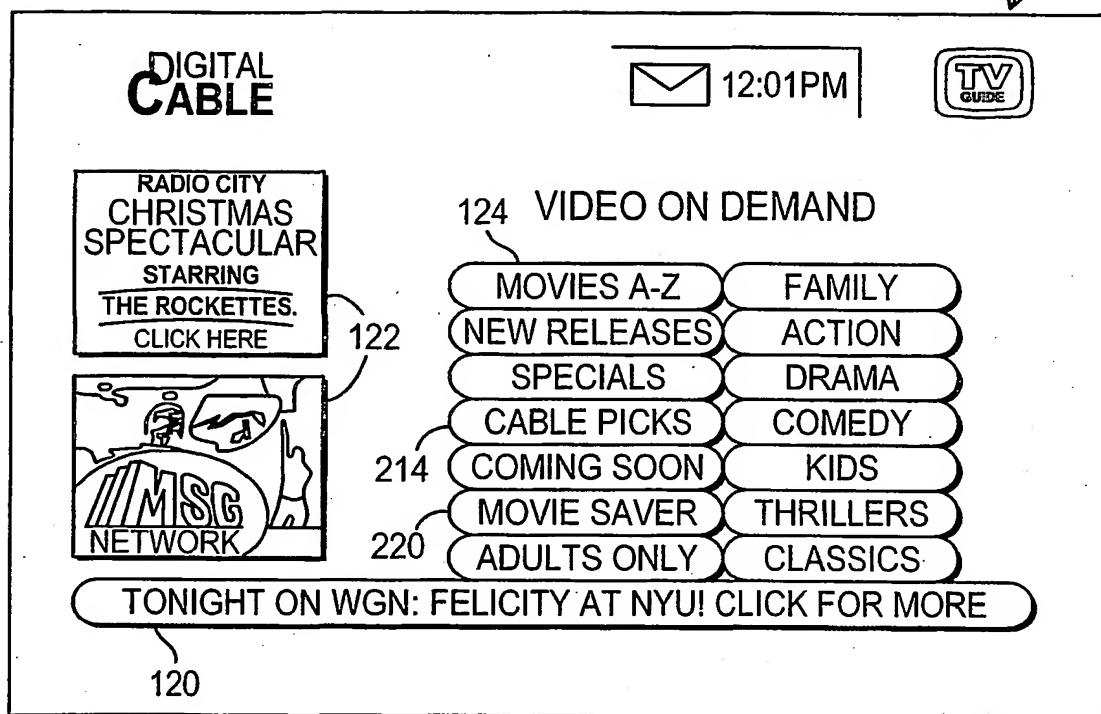


FIG. 8

126

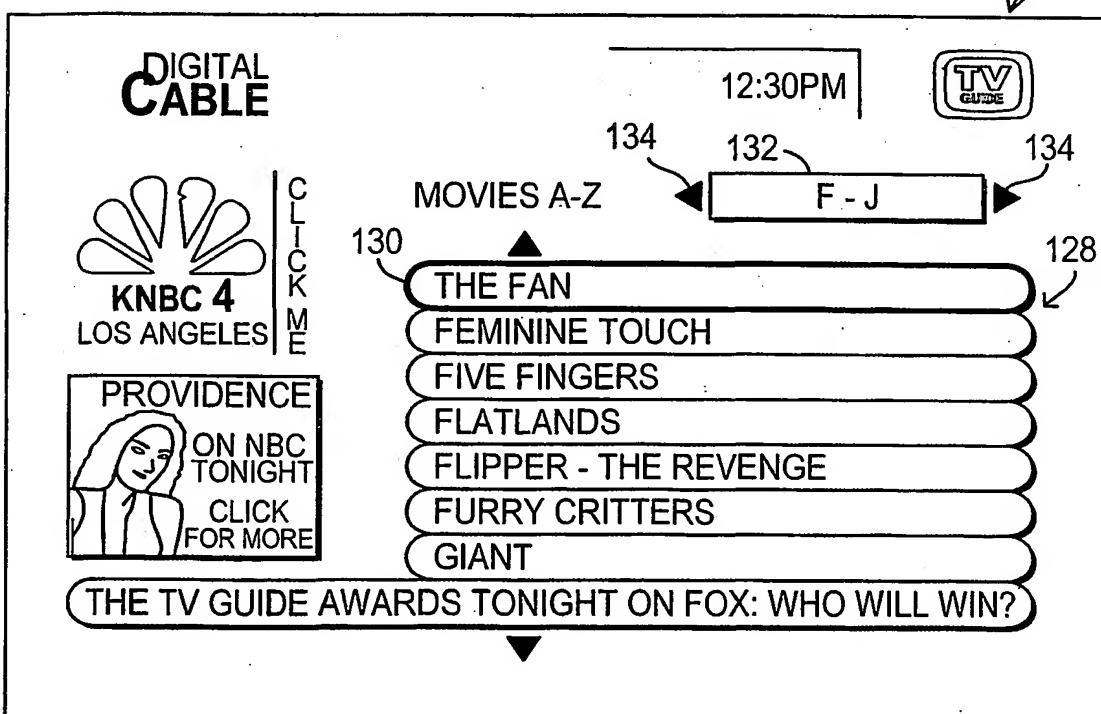


FIG. 9

SUBSTITUTE SHEET (RULE 26)

9/24

136

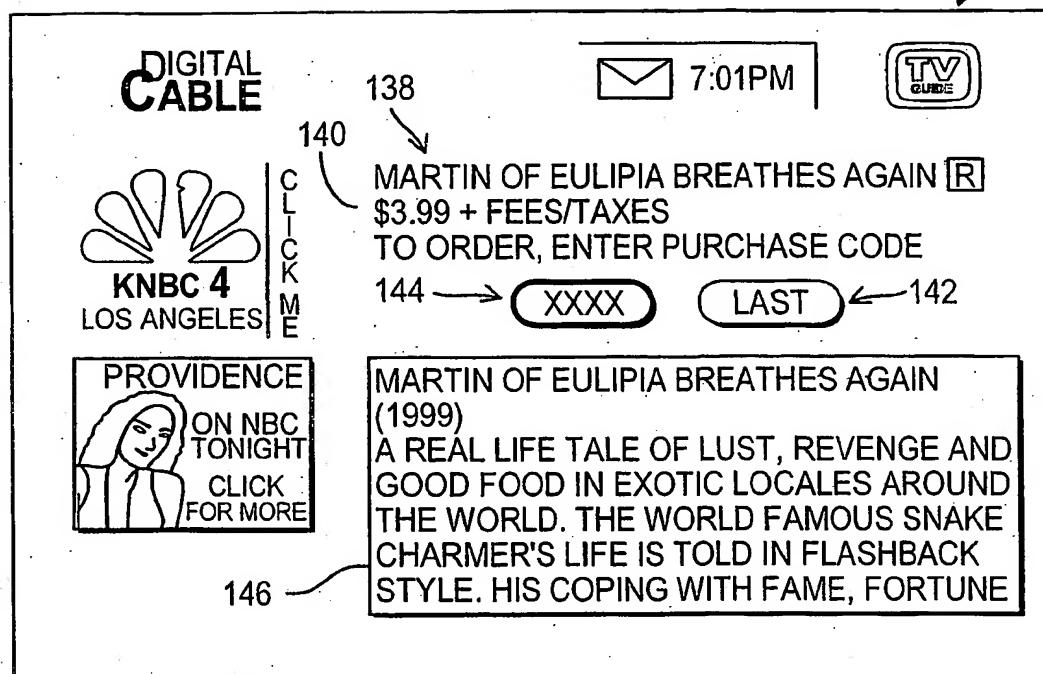


FIG. 10

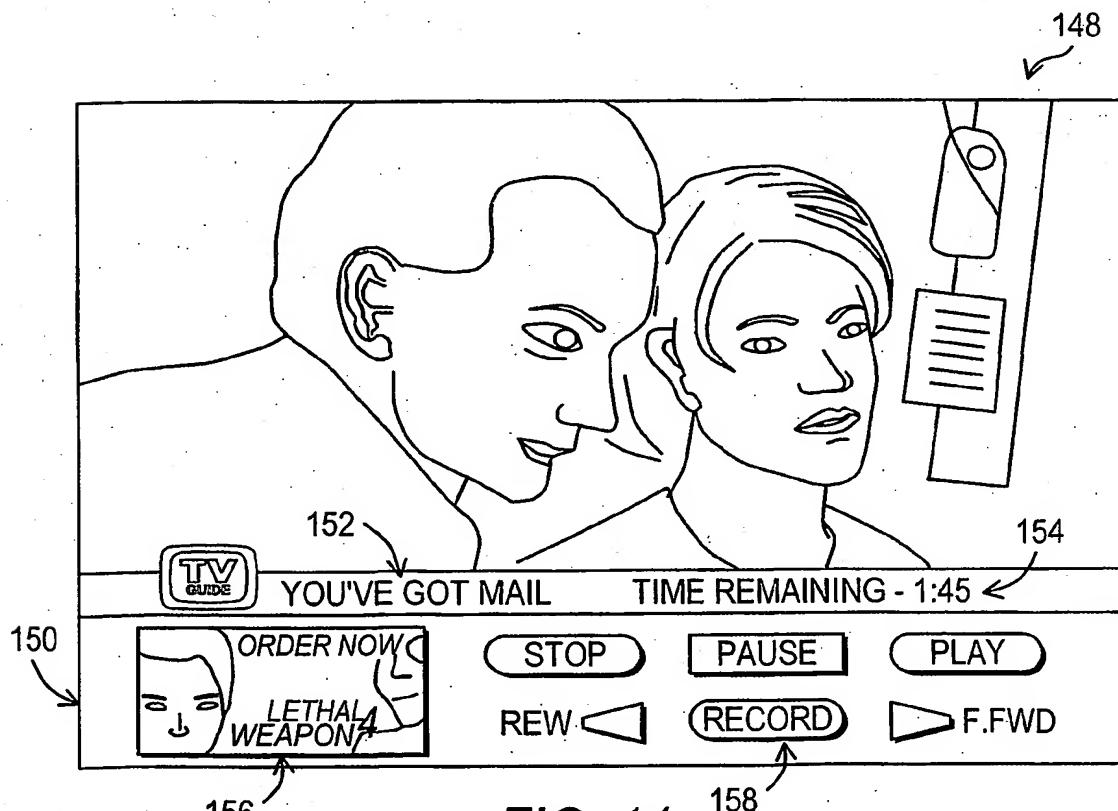


FIG. 11

SUBSTITUTE SHEET (RULE 26)

10/24

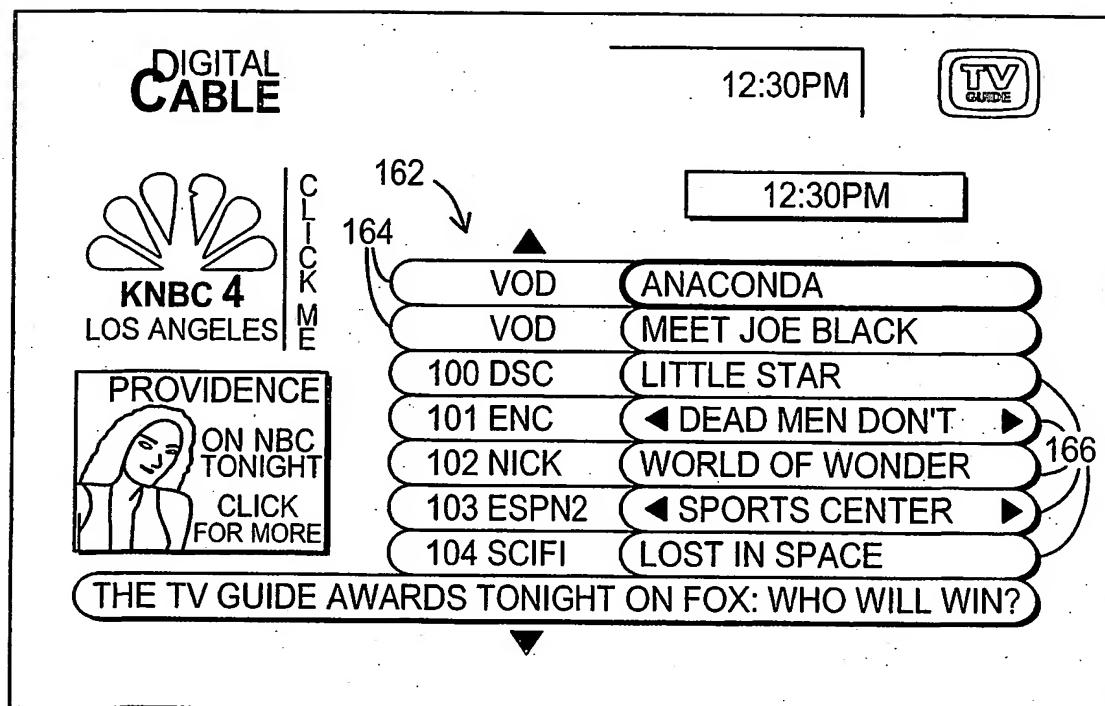


FIG. 12

SUBSTITUTE SHEET (RULE 26)

11/24

168

DIGITAL CABLE

12:30PM 

12:30PM

170 VOD HOLYFIELD VS LEWIS

VOD WORLD CUP SOCCER

25 ESPN NBA INSIDE STUFF

307 ESPN2 SOCCER: SCOTTISH

401 FSWO TONIGHT AT THE FIGHTS

1:00PM

404 OUTLI CA SAND BLAST

172

THE TV GUIDE AWARDS TONIGHT ON FOX: WHO WILL WIN?

170

172

KNBC 4
LOS ANGELES

CLICK ME

PROVIDENCE

ON NBC
TONIGHT

CLICK
FOR MORE

FIG. 13

SUBSTITUTE SHEET (RULE 26)

12/24

176

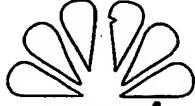
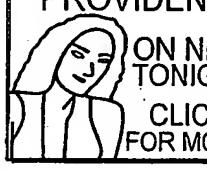
DIGITAL CABLE	
 KNBC 4 LOS ANGELES	CLICK ME
 PROVIDENCE ON NBC TONIGHT CLICK FOR MORE	12:30PM
THE TV GUIDE AWARDS TONIGHT ON FOX: WHO WILL WIN?	
180	
12:30PM	
174	VOD COMA
	VOD AS GOOD AS IT GETS
	16 MAX FIVE FINGERS
	39 AMC FLIGHT OF THE INTRUDER
	49 PPV2 SPECIES
	52 TBS TENTACLES
	104 MULTI RAPPIN' RODENTS
178	
	

FIG. 14**SUBSTITUTE SHEET (RULE 26)**

13/24

184

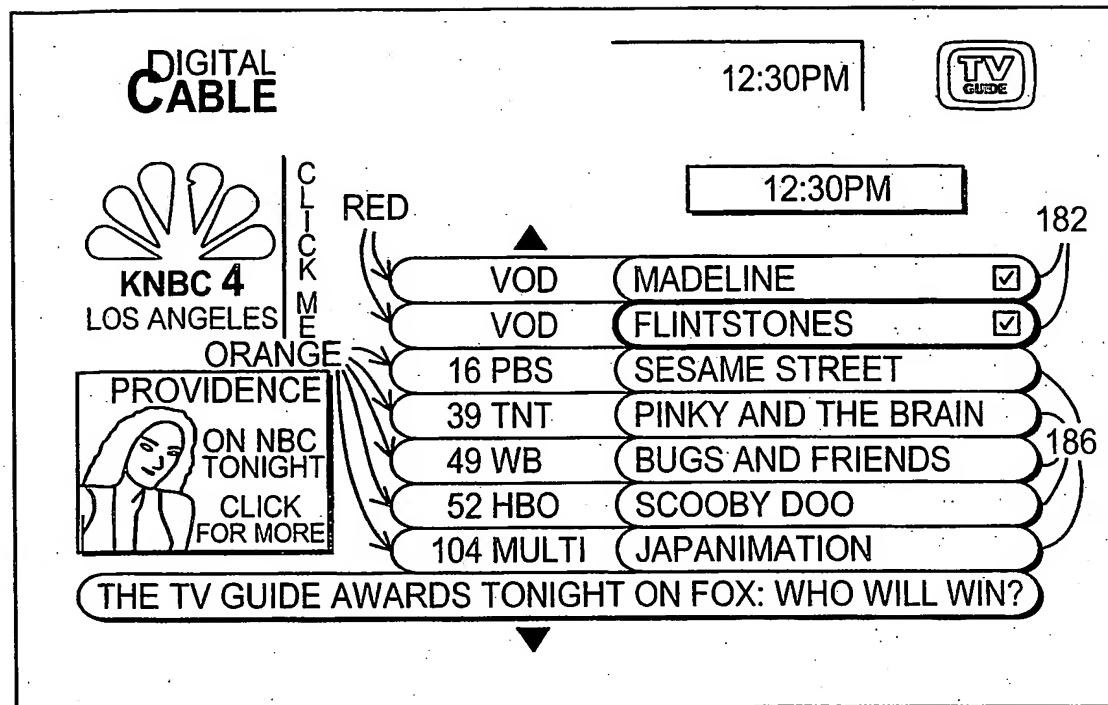
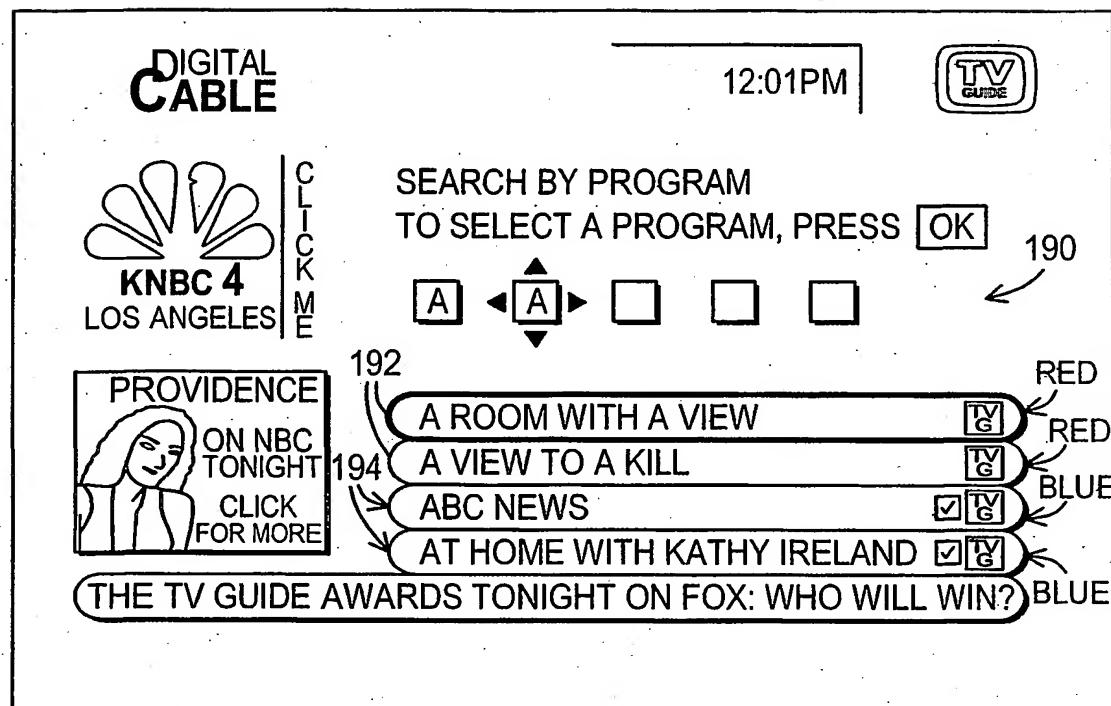


FIG. 15

SUBSTITUTE SHEET (RULE 26)

14/24

**FIG. 16****SUBSTITUTE SHEET (RULE 26)**

15/24

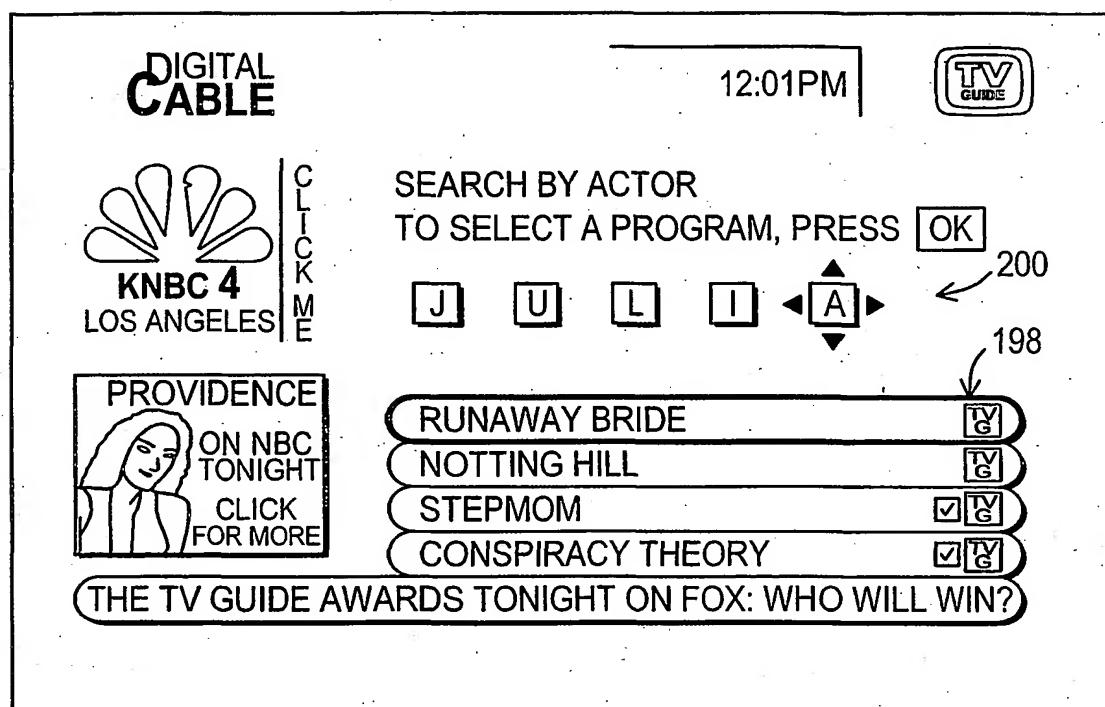


FIG. 17

SUBSTITUTE SHEET (RULE 26)

16/24

202

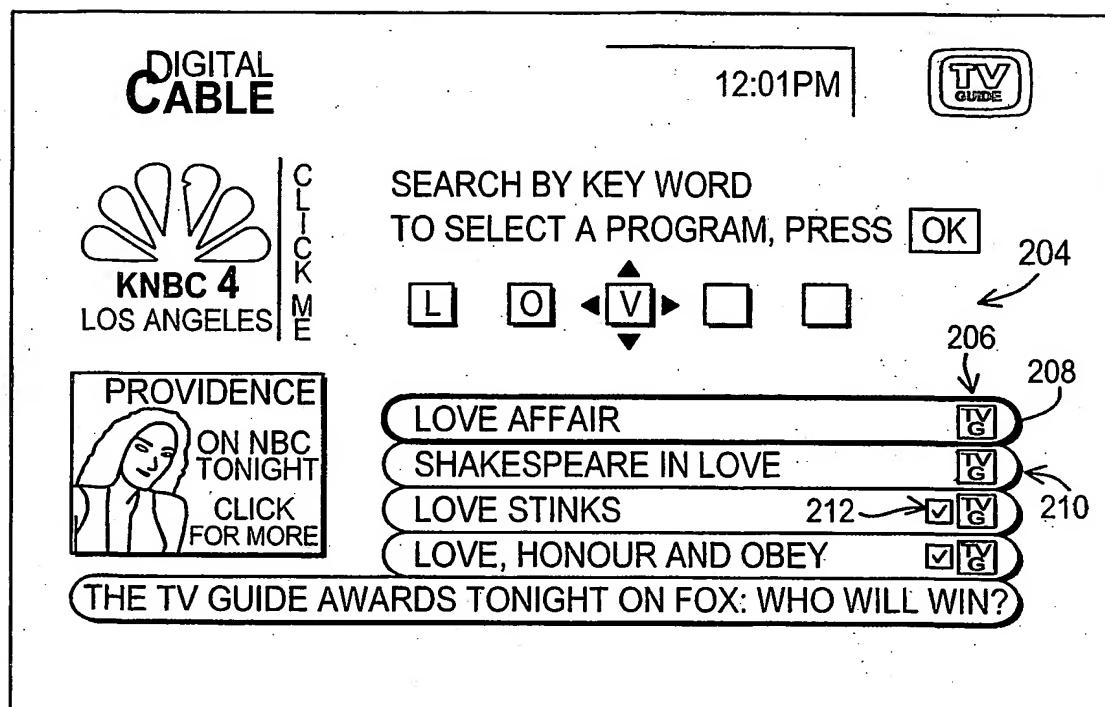


FIG. 18

SUBSTITUTE SHEET (RULE 26)

17/24

216
↓

DIGITAL CABLE

12:30PM 

KNBC 4 LOS ANGELES

PROVIDENCE ON NBC TONIGHT

CLICK FOR MORE

CABLE PICKS 12:30PM

▲ 218 ▾

VOD	COMA
VOD	AS GOOD AS IT GETS
16 MAX	FIVE FINGERS
39 AMC	FLIGHT OF THE INTRUDER
49 PPV2	SPECIES
52 TBS	WORLD CUP SOCCER <input checked="" type="checkbox"/>
25 ESPN	BOXING 

THE TV GUIDE AWARDS TONIGHT ON FOX: WHO WILL WIN?

FIG. 19

SUBSTITUTE SHEET (RULE 26)

18/24

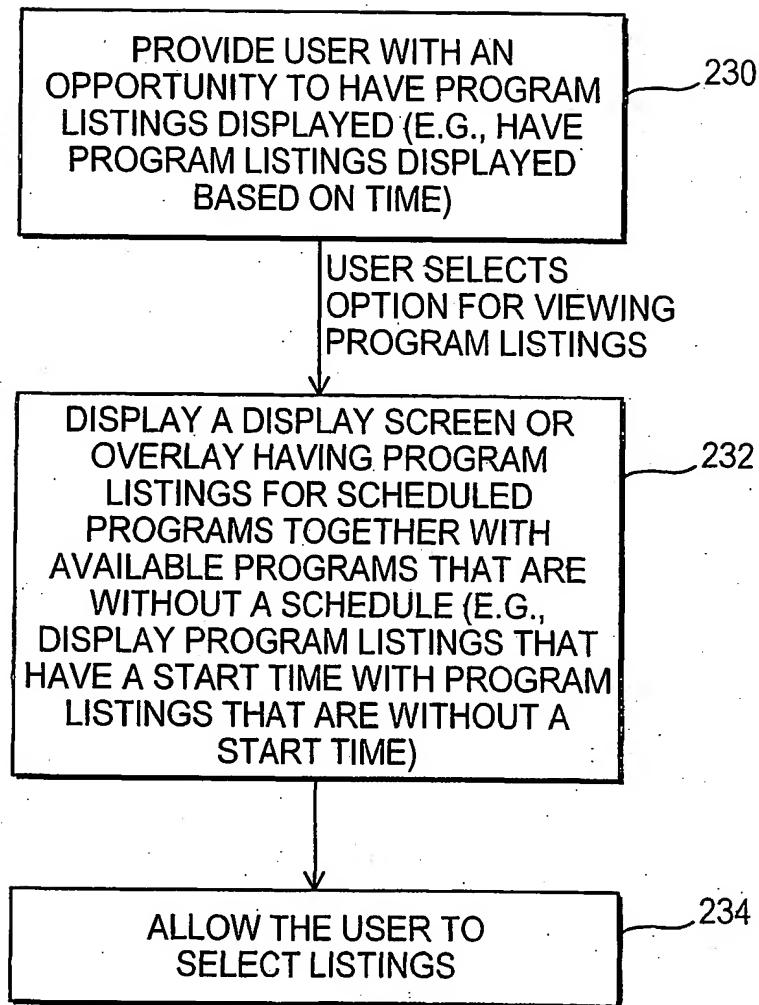


FIG. 20

SUBSTITUTE SHEET (RULE 26)

19/24

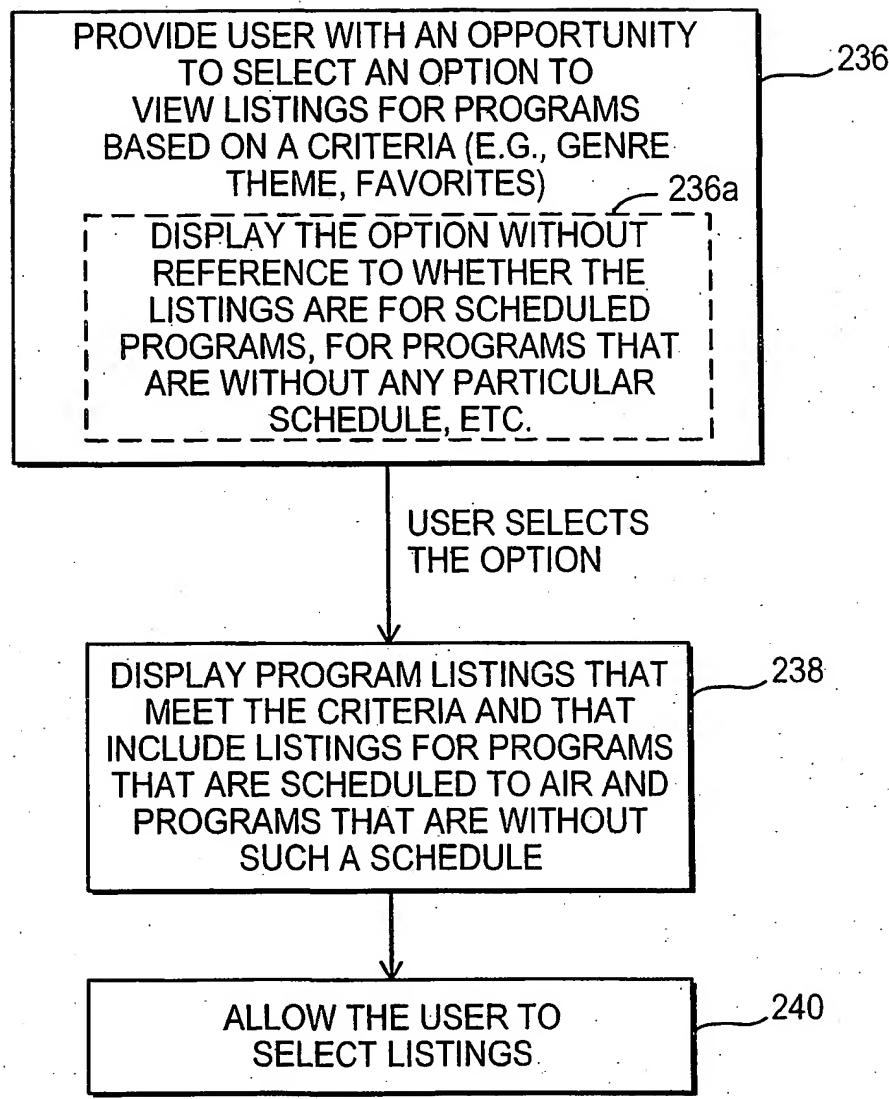


FIG. 21

SUBSTITUTE SHEET (RULE 26)

20/24

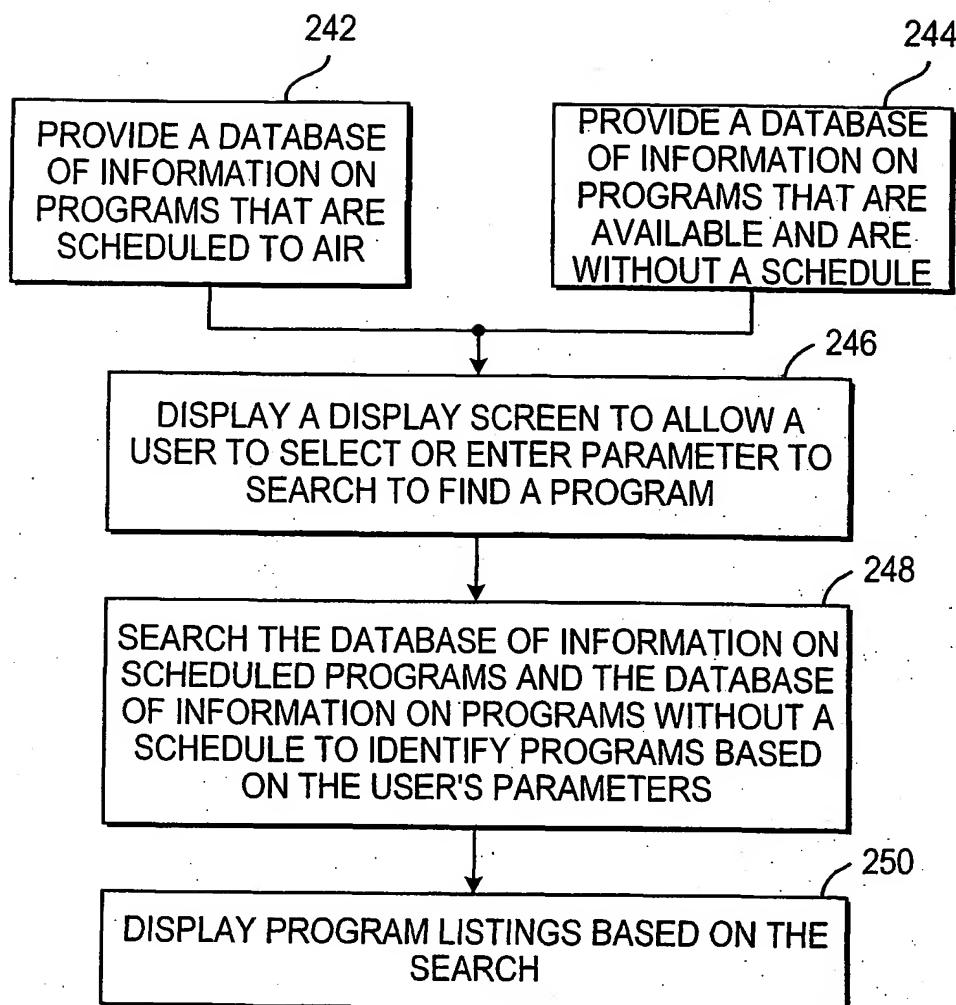


FIG. 22

SUBSTITUTE SHEET (RULE 26)

21/24

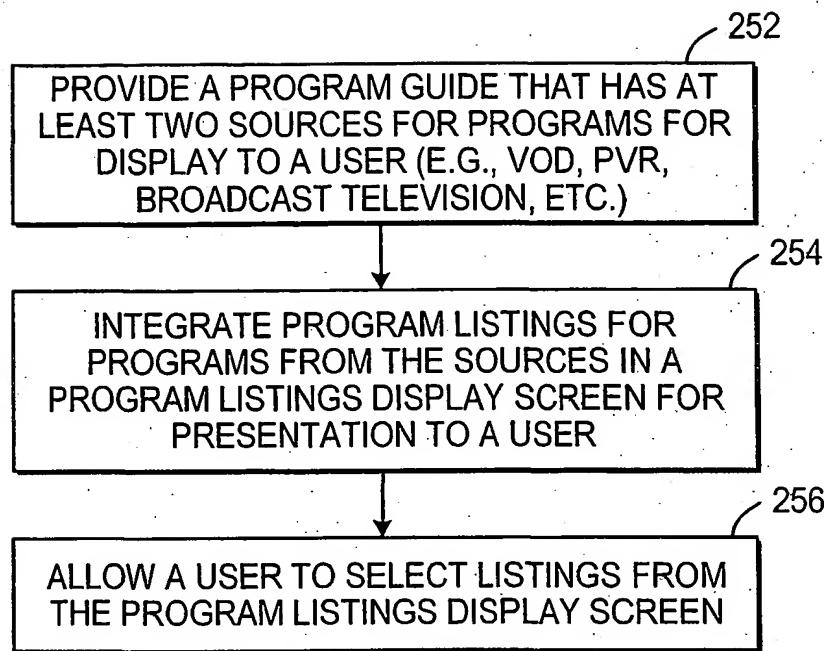


FIG. 23

SUBSTITUTE SHEET (RULE 26)

22/24

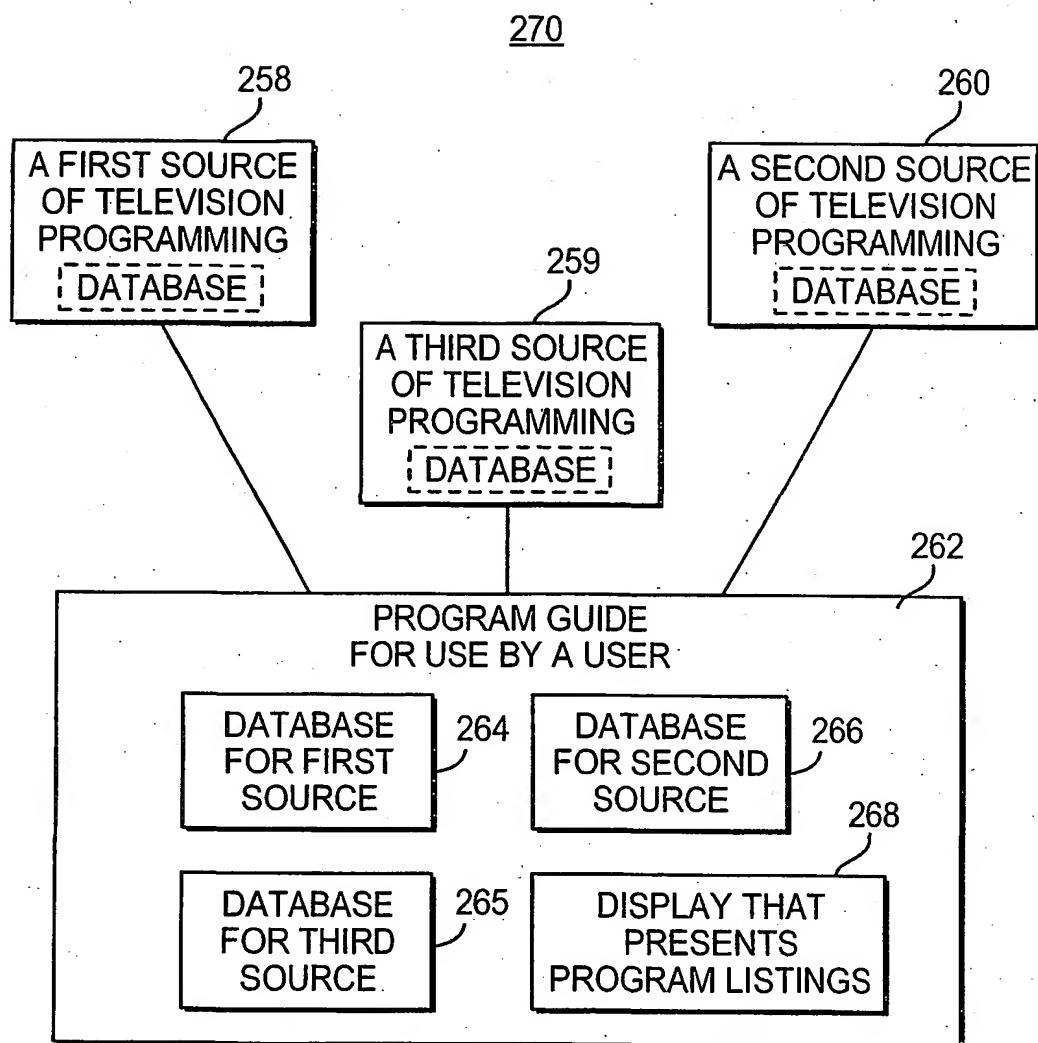


FIG. 24

SUBSTITUTE SHEET (RULE 26)

23/24

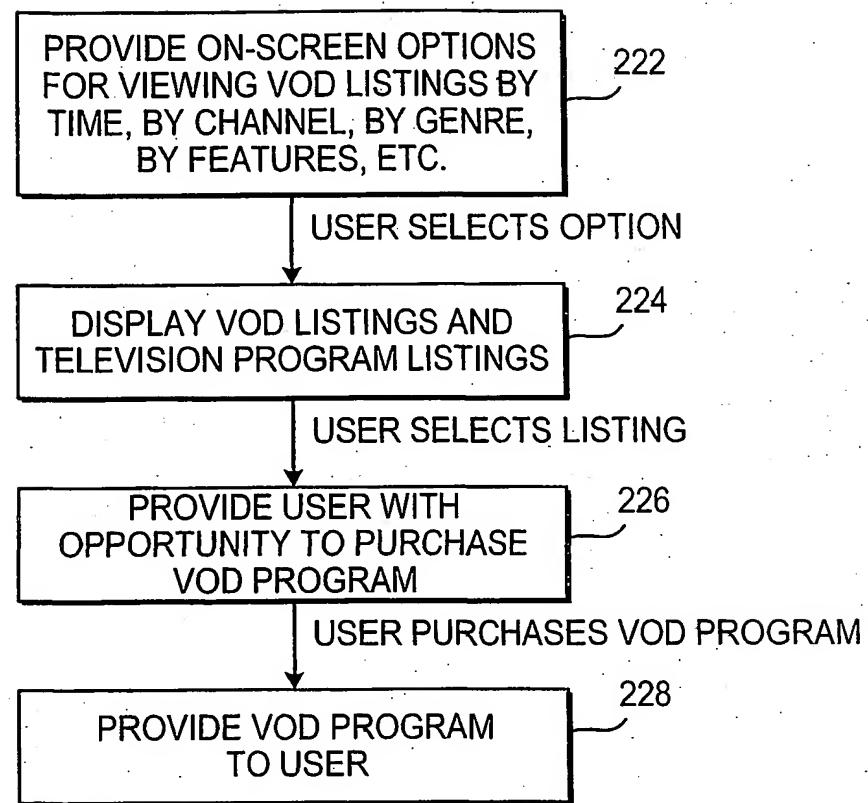


FIG. 25

SUBSTITUTE SHEET (RULE 26)

24/24

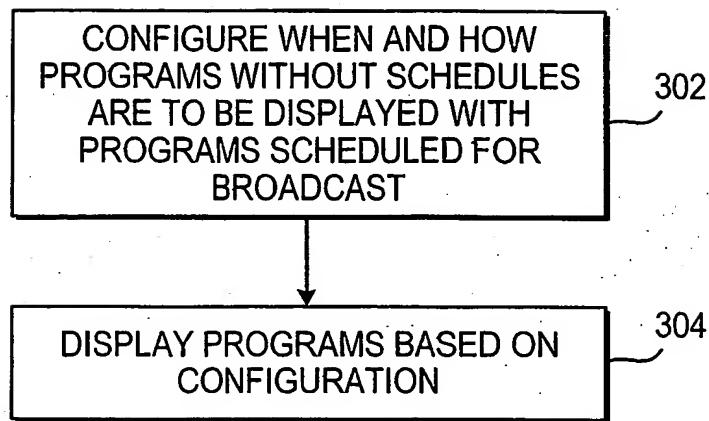


FIG. 26

SUBSTITUTE SHEET (RULE 26)

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
18 October 2001 (18.10.2001)

PCT

(10) International Publication Number
WO 01/78382 A3

(51) International Patent Classification⁷: H04N 5/445

(21) International Application Number: PCT/US01/11534

(22) International Filing Date: 10 April 2001 (10.04.2001)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/195,946 10 April 2000 (10.04.2000) US
60/202,306 5 May 2000 (05.05.2000) US

(71) Applicant: UNITED VIDEO PROPERTIES, INC.
[US/US]: 7140 South Lewis Avenue, Tulsa, OK 74136
(US).

(72) Inventors: WALKER, Todd, A.; 11126 South 70th East
Avenue, Bixby, OK 74008 (US). ELLIS, Michael, D.;
1300 Kingwood Place, Boulder, CO 80304 (US). GAY-
DOU, Danny, R.; 9731 S. Evanston Avenue E. #3008,

Tulsa, OK 74137 (US). REICHARDT, M., Scott: 7735
S. Memorial Drive #3303, Tulsa, OK 74133 (US).

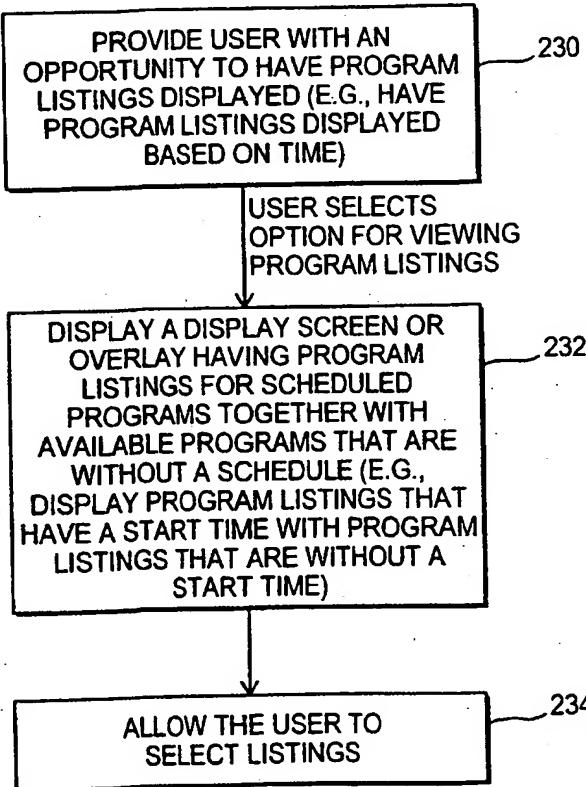
(74) Agents: PIERRI, Margaret, A. et al.; c/o Fish & Neave,
1251 Avenue of the Americas, New York, NY 10020 (US).

(81) Designated States (*national*): AE; AG, AL, AM, AT, AU,
AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU,
CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM,
HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK,
LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX,
MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL,
TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW.

(84) Designated States (*regional*): ARIPO patent (GH, GM,
KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian
patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European
patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE,
IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF,
CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: INTERACTIVE TELEVISION PROGRAM GUIDE SYSTEMS WITH INTEGRATED PROGRAM LISTINGS



(57) Abstract: An interactive television application such as an interactive television program guide may display screens of program listings for a user. Such program guide screens may include listings for both scheduled program and for programs that are without a scheduled start time. Program listings may be displayed based on time, genre, theme, etc. Menu options may be provided that allow the user to search for video-on-demand programs by title, actor, keyword, genre, etc.

WO 01/78382 A3

**Published:**

— with international search report

(88) Date of publication of the international search report:

28 March 2002

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

INTERNATIONAL SEARCH REPORT

International Application No PCT/US 01/11534

A. CLASSIFICATION OF SUBJECT MATTER IPC 7 H04N5/445
--

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 H04N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT
--

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 00 04706 A (UNITED VIDEO PROPERTIES) 27 January 2000 (2000-01-27)	1-12, 25-36, 49-60
A	abstract; figures 8,10,11A,11B,11C,18B,18C,18E page 3, line 29 -page 4, line 5 page 5, line 19 -page 6, line 6 page 26, line 17 -page 27, line 4 page 38, line 6 - line 29 page 41, line 3 -page 42, line 32 page 43, line 13 - line 30 claim 2 ----	12-24, 37-48, 61-72

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

* Special categories of cited documents:

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

T later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

X document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

Y document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

& document member of the same patent family

Date of the actual completion of the international search

23 October 2001

Date of mailing of the international search report

02/11/2001

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl.
Fax: (+31-70) 340-3016

Authorized officer

Berwitz, P

1

INTERNATIONAL SEARCH REPORT

Inte...	nal Application No
PCT/US 01/11534	

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No
X	WO 99 20049 A (THOMSON CONSUMER ELECTRONICS) 22 April 1999 (1999-04-22) figure 2 ---	1-3, 7, 11, 25-27, 31, 35, 49-51, 55, 59
A	EP 0 560 593 A (SONY) 15 September 1993 (1993-09-15) column 6, line 4 - line 24 column 20, line 53 -column 22, line 18 figures 18, 19 ---	1, 4, 6, 7, 11, 13, 16, 18, 19, 23, 25, 28, 30, 31, 35, 37, 40, 42, 43, 47, 49, 52, 54, 55, 59, 61, 64, 66, 67, 71
A	US 5 751 282 A (GIRARD ET AL.) 12 May 1998 (1998-05-12) abstract; figures 1-4 column 1, line 37 -column 2, line 17 column 4, line 9 - line 33 ---	1-4, 6-11, 13-16, 18-23, 25-28, 30-35, 37-40, 42-47, 49-52, 54-59, 61-64, 66-71
		-/-

INTERNATIONAL SEARCH REPORT

International Application No
PCT/US 01/11534

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	GB 2 340 633 A (MICROSOFT CORP) 23 February 2000 (2000-02-23) abstract; figures 6-8,15 page 4, line 19 -page 6, line 25 page 10, line 6 - line 11 page 11, line 24 -page 15, line 2 page 16, line 6 - line 13 page 18, line 13 - line 23 page 23, line 3 -page 25, line 22 page 27, line 9 -page 28, line 9 page 39, line 4 - line 11 ---	1,2,4-6, 8-10,13, 25,26, 28-30, 32-34, 37,49, 50, 52-54, 56-58,61
A	WO 99 13641 A (PREVUE INTERNATIONAL) 18 March 1999 (1999-03-18) page 2, line 17 -page 4, line 3 page 6, line 27 -page 9, line 8 page 12, line 7 -page 15, line 20 ---	12,37,61
P,X	WO 00 46986 A (THOMSON LICENSING) 10 August 2000 (2000-08-10) page 6, line 7 -page 7, line 36 figures 3,4 ----	1-3,5-8, 11,12, 25-27, 29-32, 35,36, 49-51, 53-56,59

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 01/11534

Patent document cited in search report	Publication date		Patent family member(s)	Publication date
WO 0004706	A 27-01-2000	AU BR EP WO	4994699 A 9912086 A 1145543 A2 0004706 A2	07-02-2000 10-04-2001 17-10-2001 27-01-2000
WO 9920049	A 22-04-1999	AU CN EP WO	1080799 A 1276127 T 1023807 A1 9920049 A1	03-05-1999 06-12-2000 02-08-2000 22-04-1999
EP 0560593	A 15-09-1993	JP JP DE DE EP US	3198486 B2 5260554 A 69324842 D1 69324842 T2 0560593 A2 5371553 A	13-08-2001 08-10-1993 17-06-1999 25-11-1999 15-09-1993 06-12-1994
US 5751282	A 12-05-1998	NONE		
GB 2340633	A 23-02-2000	GB GB GB GB GB DE FR GB GB JP	2340634 A ,B 2340635 A ,B 2340636 A ,B 2340637 A ,B 2340638 A ,B 19814254 A1 2763148 A1 2353123 A ,B 2325537 A ,B 11008810 A	23-02-2000 23-02-2000 23-02-2000 23-02-2000 23-02-2000 15-10-1998 13-11-1998 14-02-2001 25-11-1998 12-01-1999
WO 9913641	A 18-03-1999	AU WO	9298398 A 9913641 A1	29-03-1999 18-03-1999
WO 0046986	A 10-08-2000	US AU WO	6182287 B1 2614600 A 0046986 A1	30-01-2001 25-08-2000 10-08-2000